# THE DATASHEET OF

# TOP265KG-TL

# TOP267V
# TOPSwitch-JX Family

Integrated Off-Line Switcher with EcoSmart Technology
for Highly Efficient Power Supplies
Auto-Restart Protection Option

## Product Highlights

### EcoSmart™ – Energy Efficient
- Ideal for applications from 20 W to 44 W
- Energy efficient over entire load range
- No-load consumption below 100 mW at 265 VAC
- Up to 750 mW standby output power for 1 W input at 230 VAC

### High Design Flexibility for Low System Cost
- Multi-mode PWM control maximizes efficiency at all loads
- 132 kHz operation reduces transformer and power supply size
  - 66 kHz option for highest efficiency requirements
- Accurate programmable current limit
- Optimized line feed-forward for line ripple rejection
- Frequency jittering reduces EMI filter cost
- Fully integrated soft-start for minimum start-up stress
- 725 V rated MOSFET
  - Simplifies meeting design derating requirements

### Extensive Protection Features
- Auto-restart limits power delivery to <3% during overload faults
  - Output short-circuit protection (SCP)
  - Output over-current protection (OCP)
  - Output overload protection (OPP)
- Output overvoltage protection (OVP)
  - Hysteretic shutdown
  - Simple fast AC reset
  - Primary or secondary sensed
- Line undervoltage (UV) detection prevents turn-off glitches
- Line overvoltage (OV) shutdown extends line surge withstand
- Accurate thermal shutdown with large hysteresis (OTP)

### Advanced Package Options
- eDIP™-12 package:
  - 43 W / 117 W universal input power output capability with PCB / metal heat sink
  - Low profile horizontal orientation for ultra-slim designs
  - Heat transfer to both PCB and heat sink
  - Optional external heat sink provides thermal impedance equivalent to a TO-220

## Description

TOPSwitch™-JX cost effectively incorporates a 725 V power MOSFET, high-voltage switched current source, multi-mode PWM control, oscillator, thermal shutdown circuit, fault protection and other control circuitry onto a monolithic device.

### Typical Applications
- Notebook or laptop adapter
- Generic adapter
- Printer
- LCD monitor
- Set-top box
- PC or LCD TV standby
- Audio amplifier

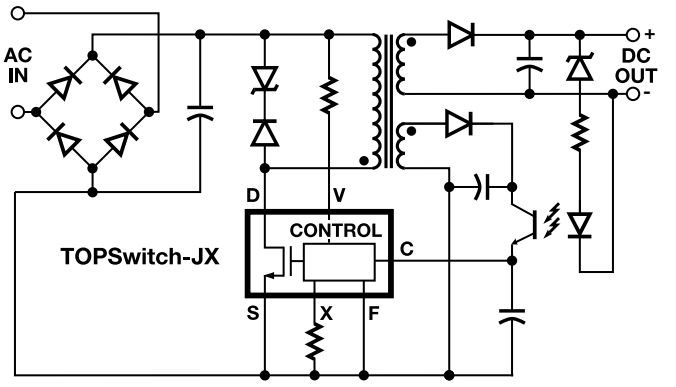



Figure 1. Typical Flyback Application.

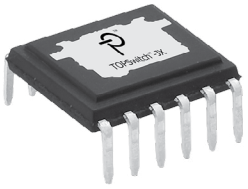


Figure 2. eDIP-12B (V Package).

**Output Power Table**

| Product[4] | PCB Copper Area[1] | | | |
|---|---|---|---|---|
| | 230 VAC ±15% | | 85-265 VAC | |
| | Adapter[2] | Open Frame[3] | Adapter[2] | Open Frame[3] |
| **TOP267V** | 27.5 W | 44 W | 19 W | 32 W |

Table 1. Output Power Table.

Notes:
1. See Key Application Considerations section for more details.
2. Maximum continuous power in a typical non-ventilated enclosed adapter measured at +50 °C ambient temperature.
3. Maximum continuous power in an open frame design at +50 °C ambient temperature.
5. Package: eDIP-12B.



This Product is Covered by Patents and/or Pending Patent Applications.

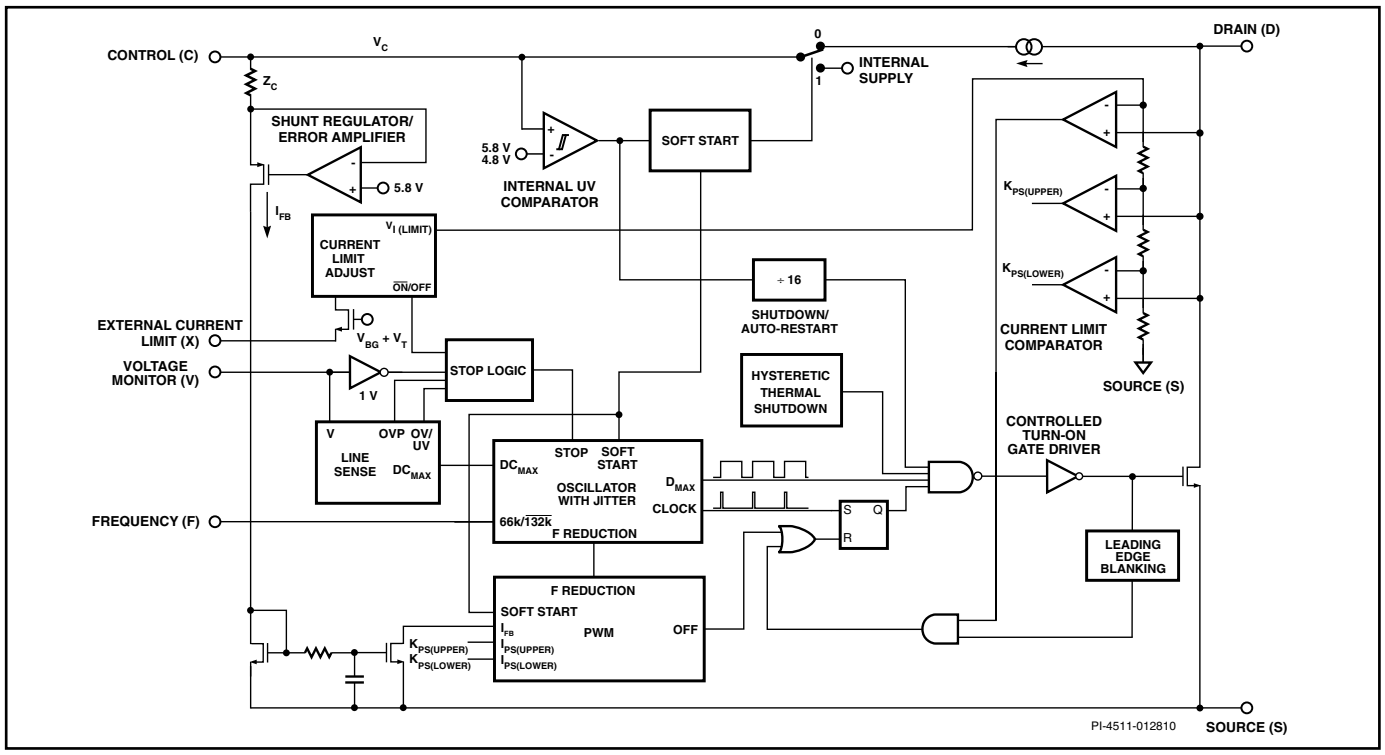



Figure 3. Functional Block Diagram.

## Pin Functional Description

### DRAIN (D) Pin:
High-voltage power MOSFET DRAIN pin. The internal start-up bias current is drawn from this pin through a switched high-voltage current source. Internal current limit sense point for drain current.

### CONTROL (C) Pin:
Error amplifier and feedback current input pin for duty cycle control. Internal shunt regulator connection to provide internal bias current during normal operation. It is also used as the connection point for the supply bypass and auto-restart/ compensation capacitor.

### EXTERNAL CURRENT LIMIT (X) Pin:
Input pin for external current limit adjustment remote-ON/OFF and device reset. A connection to SOURCE pin disables all functions on this pin. This pin should not be left floating.

### VOLTAGE MONITOR (V) Pin:
Input for OV, UV, line feed-forward with $DC_{MAX}$ reduction, output overvoltage protection (OVP), remote-ON/OFF. A connection to the SOURCE pin disables all functions on this pin. This pin should not be left floating.

### FREQUENCY (F) Pin:
Input pin for selecting switching frequency 132 kHz if connected to SOURCE pin and 66 kHz if connected to CONTROL pin. This pin should not be left floating.

### SOURCE (S) Pin:
Output MOSFET source connection for high-voltage power return. Primary-side control circuit common and reference point.

### NO CONNECTION (NC) Pin:
Internally not connected, floating potential pin.

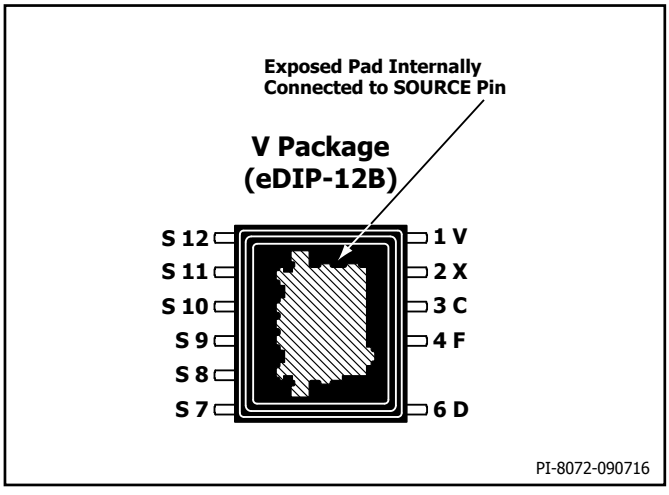



Figure 4. Pin Configuration (Top View).

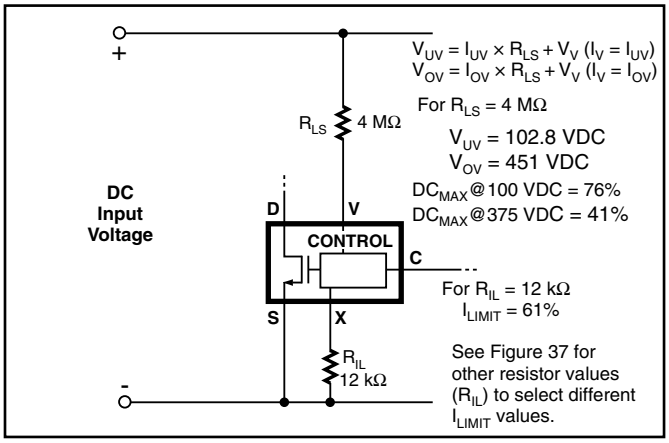



Figure 5. Package Line-Sense and Externally Set Current Limit.

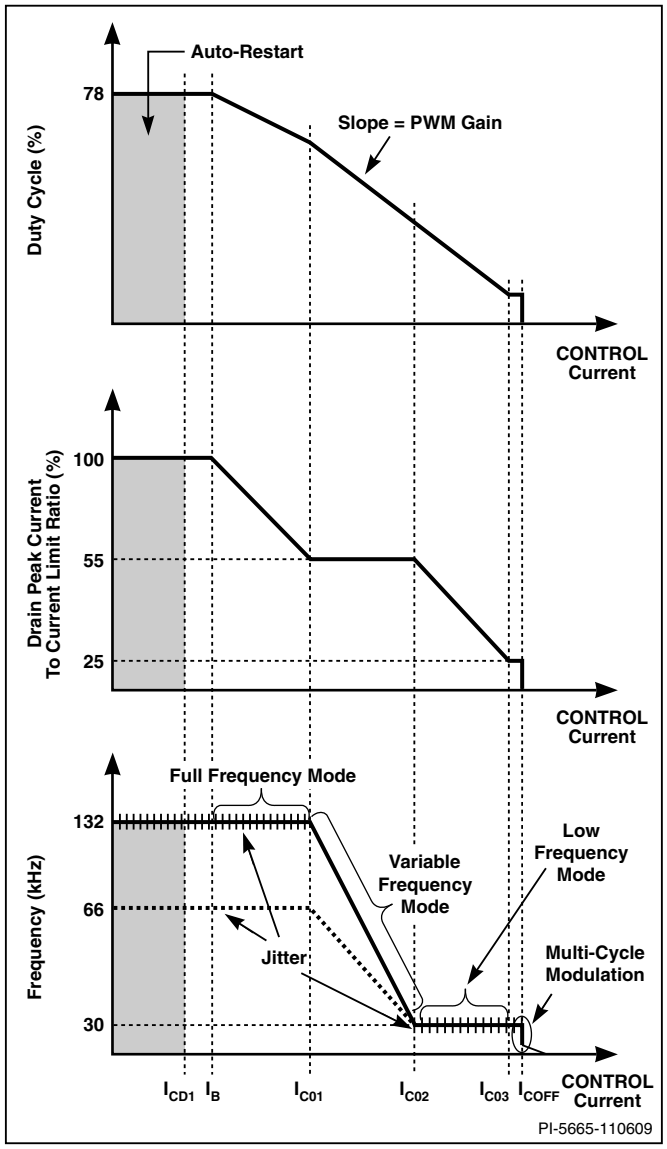



Figure 6. Control Pin Characteristics (Multi-Mode Operation).

## Typical Uses of FREQUENCY (F) Pin

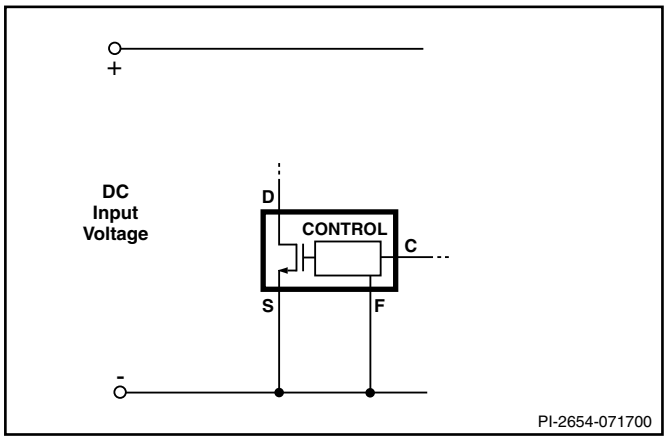



Figure 7. Full Frequency Operation (132 kHz).

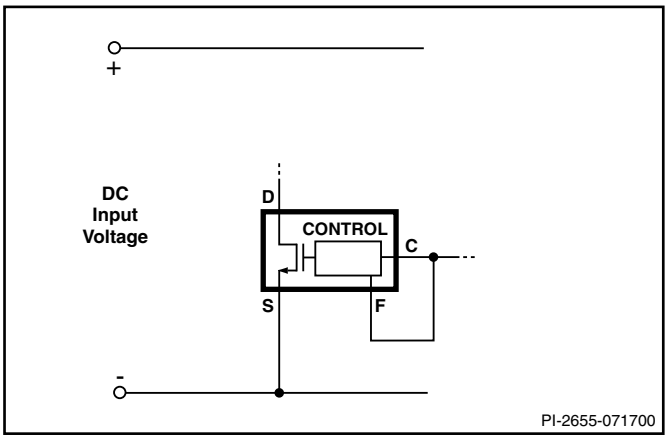



Figure 8. Half Frequency Operation (66 kHz).

## Typical Uses of VOLTAGE MONITOR (V) and EXTERNAL CURRENT LIMIT (X) Pins

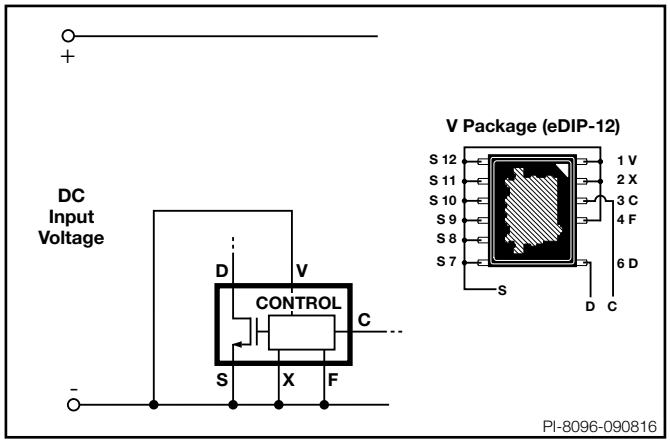



Figure 9. Three Terminal Operation (VOLTAGE MONITOR and EXTERNAL CURRENT LIMIT Features Disabled. FREQUENCY Pin Tied to SOURCE or CONTROL Pin.)

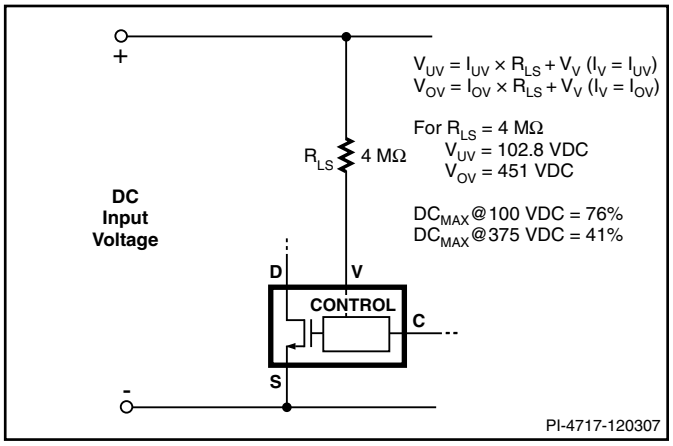



Figure 10. Line-Sensing for Undervoltage, Overvoltage and Line Feed-Forward.

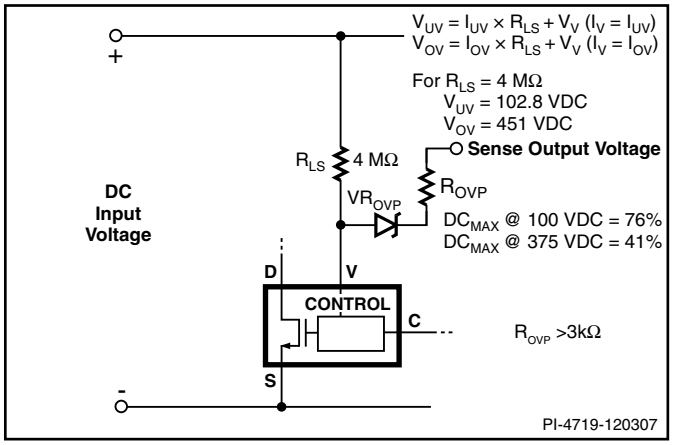



Figure 11. Line-Sensing for Undervoltage, Overvoltage, Line Feed-Forward and Hysteretic Output Overvoltage Protection.

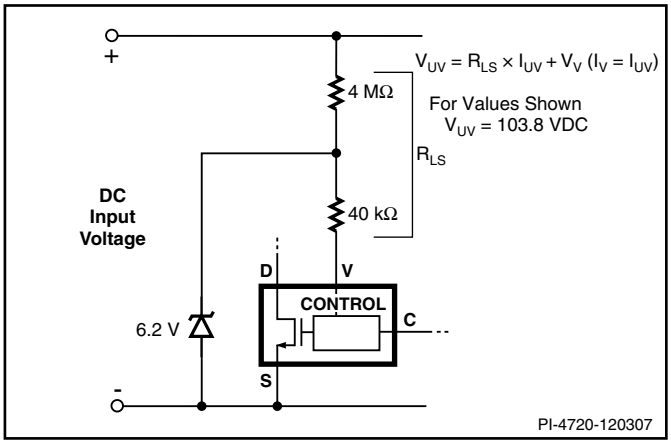



Figure 12. Line-Sensing for Undervoltage Only (Overvoltage Disabled).

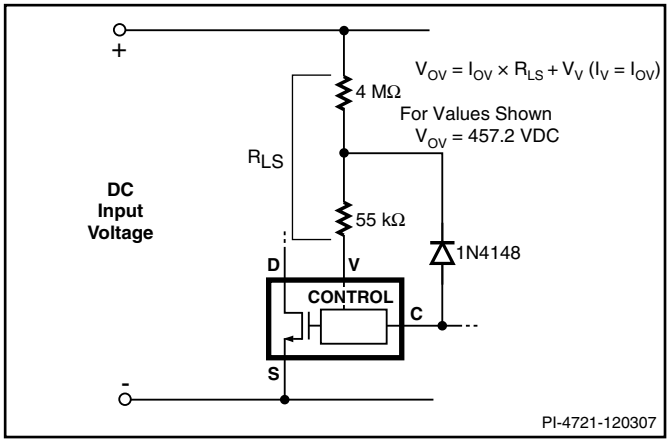



Figure 13. Line-Sensing for Overvoltage Only (Undervoltage Disabled). Maximum Duty Cycle Reduced at Low-Line and Further Reduction with Increasing Line Voltage.

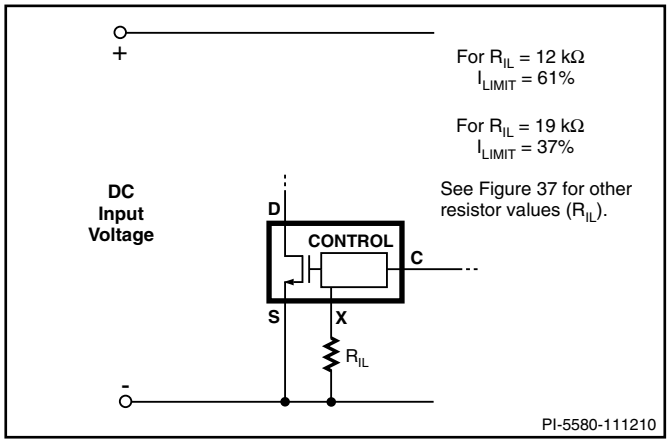



Figure 14. External Set Current Limit.

## Typical Uses of VOLTAGE MONITOR (V) and EXTERNAL CURRENT LIMIT (X) Pins (cont.)

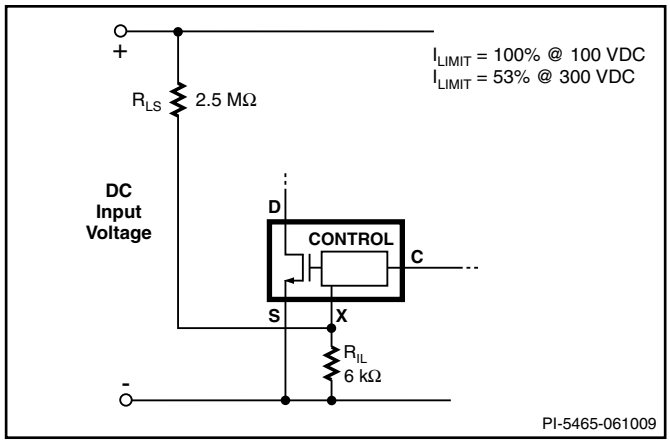



Figure 15. Current Limit Reduction with Line Voltage.

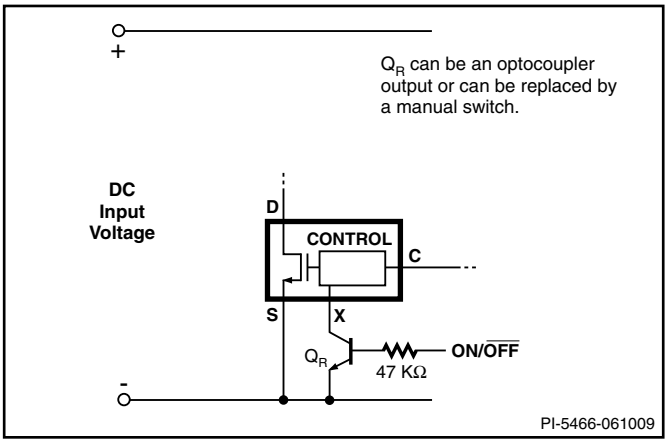



Figure 16. Active-On (Fail Safe) Remote-ON/OFF.

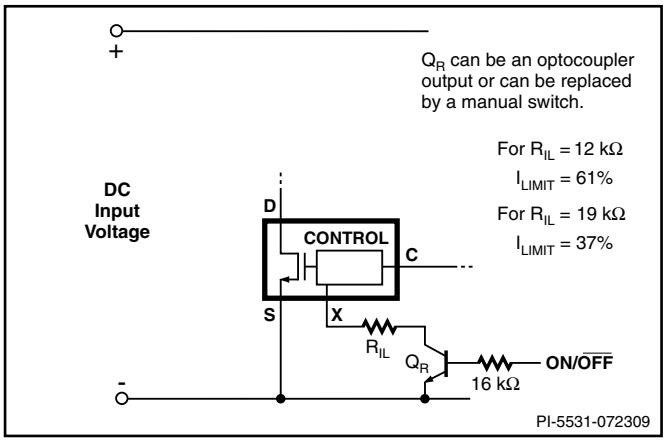



Figure 17. Active-On Remote-ON/OFF with Externally Set Current Limit.

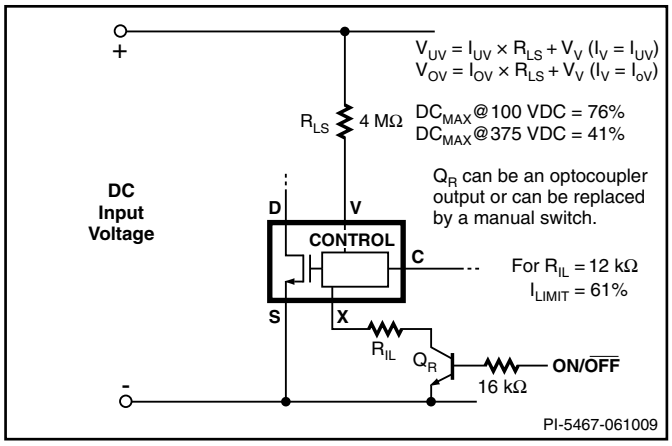



Figure 18. Active-On Remote-ON/OFF with Line-Sense and External Current Limit.

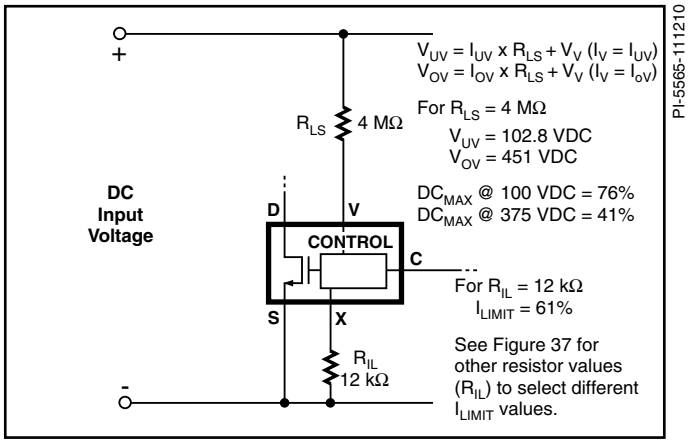



Figure 19. Line Sensing and Externally Set Current Limit.

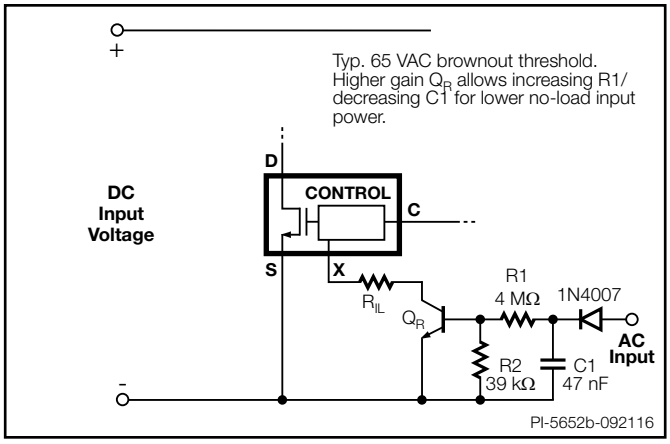



Figure 20. Externally Set Current Limit and Brown-Out.

## Absolute Maximum Ratings[2]

DRAIN Pin Peak Voltage ..... -0.3 V to 725 V
DRAIN Pin Peak Current: TOP267 ..... 5.44 A
CONTROL Pin Voltage..... -0.3 V to 9 V
CONTROL Pin Current ..... 100 mA
VOLTAGE MONITOR Pin Voltage ..... -0.3 V to 9 V
CURRENT LIMIT Pin Voltage ..... -0.3 V to 4.5 V
FREQUENCY Pin Voltage .....-0.3 V to 9 V
Storage Temperature ..... -65 °C to 150 °C
Operating Junction Temperature.....-40 °C to 150 °C
Lead Temperature[1] .....260 °C

Notes:
1. 1/16 in. from case for 5 seconds.
2. Maximum ratings specified may be applied one at a time without causing permanent damage to the product. Exposure to Absolute Maximum Rating conditions for extended periods of time may affect product reliability.

## Thermal Resistance

Thermal Resistance: V Package
($\theta_{JA}$) .....68 °C/W[3], 58 °C/W[4]
($\theta_{JC}$) ..... 2 °C/W[2]

Notes:
1. Free standing with no heat sink.
2. Measured at the back surface of tab.
3. Soldered (including exposed pad for K package) to typical application PCB with a heat sinking area of 0.36 sq. in. (232mm$^2$), 2 oz. (610 g/m$^2$) copper clad.
4. Soldered (including exposed pad for K package) to typical application PCB with a heat sinking area of 1 sq. in. (645 mm$^2$), 2 oz. (610 g/m$^2$) copper clad.

| Parameter | Symbol | Conditions SOURCE = 0 V; $T_J$ = -40 to 125 °C (Unless Otherwise Specified) | | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| **Control Functions** | | | | | | | |
| **Switching Frequency in Full Frequency Mode (Average)** | $f_{OSC}$ | $T_J$ = 25 °C | FREQUENCY Pin Connected to SOURCE | 119 | 132 | 145 | kHz |
| | | | FREQUENCY Pin Connected to CONTROL | 59.4 | 66 | 72.6 | |
| **Frequency Jitter Deviation** | Δf | | 132 kHz Operation | | ±5 | | kHz |
| | | | 66 kHz Operation | | ±2.5 | | |
| **Frequency Jitter Modulation Rate** | $f_M$ | | | | 250 | | Hz |
| **Maximum Duty Cycle** | $DC_{MAX}$ | $I_C = I_{CD1}$ | $I_V \le I_{V(DC)}$ $V_V$ = 0 V | 75 | 78 | 83 | % |
| | | | $I_V$ = 95 µA | 30 | | | |
| **Soft-Start Time** | $t_{SOFT}$ | $T_J$ = 25 °C | | | 17 | | ms |
| **PWM Gain** | $DC_{REG}$ | $T_J$ = 25 °C $I_B < I_C < I_{C01}$ See Note C | | -54 | -44 | -34 | %/mA |
| | | $T_J$ = 25 °C $I_C \ge I_{C01}$ See Note A | | -60 | -50 | -40 | |
| **PWM Gain Temperature Drift** | | See Note B | | | -0.01 | | %/mA/°C |
| **External Bias Current** | $I_B$ | 66 kHz Operation | | 0.9 | 1.5 | 2.1 | mA |

| Parameter | Symbol | Conditions<br>SOURCE = 0 V; $T_J$ = -40 to 125 °C<br>(Unless Otherwise Specified) | | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| **Control Functions (cont.)** | | | | | | | |
| **External Bias Current** | $I_B$ | 132 kHz Operation | | 1.2 | 1.8 | 2.4 | mA |
| **CONTROL Current at 0% Duty Cycle** | $I_{C(OFF)}$ | 66 kHz Operation | | | 3.1 | 4.1 | mA |
| | | 132 kHz Operation | | | 3.4 | 4.4 | |
| **Dynamic Impedance** | $Z_C$ | $I_C$ = 2.5 mA; $T_J$ = 25 °C<br>See Figure 22 | | 13 | 21 | 25 | Ω |
| **Dynamic Impedance Temperature Drift** | | | | | 0.18 | | %/°C |
| **CONTROL Pin Internal Filter Pole** | | | | | 7 | | kHz |
| **Upper Peak Current to Set Current Limit Ratio** | $k_{PS(UPPER)}$ | $T_J$ = 25 °C<br>See Note C | | 50 | 55 | 60 | % |
| **Lower Peak Current to Set Current Limit Ratio** | $k_{PS(LOWER)}$ | $T_J$ = 25 °C<br>See Note C | | | 25 | | % |
| **Multi-Cycle-Modulation Switching Frequency** | $f_{MCM(MIN)}$ | $T_J$ = 25 °C | | | 30 | | kHz |
| **Minimum Multi-Cycle-Modulation On Period** | $T_{MCM(MIN)}$ | $T_J$ = 25 °C | | | 135 | | µs |
| **Shutdown/Auto-Restart** | | | | | | | |
| **CONTROL Pin Charging Current** | $I_{C(CH)}$ | $T_J$ = 25 °C | $V_C$ = 0 V | -5.0 | -3.5 | -1.0 | mA |
| | | | $V_C$ = 5 V | -3.0 | -1.8 | -0.6 | |
| **Charging Current Temperature Drift** | | See Note B | | | 0.5 | | %/°C |
| **Auto-Restart Upper Threshold Voltage** | $V_{C(AR)U}$ | | | | 5.8 | | V |
| **Auto-Restart Lower Threshold Voltage** | $V_{C(AR)L}$ | | | 4.5 | 4.8 | 5.1 | V |
| **Voltage Monitor (V) and External Current Limit (X) Inputs** | | | | | | | |
| **Auto-Restart Hysteresis Voltage** | $V_{C(AR)HYST}$ | | | 0.8 | 1.0 | | V |
| **Auto-Restart Duty Cycle** | $DC_{AR}$ | | | | 2 | 4 | % |
| **Auto-Restart Frequency** | $f_{AR}$ | | | | 0.5 | | Hz |
| **Line Undervoltage Threshold Current and Hysteresis (V Pin)** | $I_{UV}$ | $T_J$ = 25 °C | Threshold | 22 | 25 | 27 | µA |
| | | | Hysteresis | | 14 | | µA |
| **Line Overvoltage Threshold Current and Hysteresis (V Pin)** | $I_{OV}$ | $T_J$ = 25 °C | Threshold | 107 | 112 | 117 | µA |
| | | | Hysteresis | | 4 | | µA |

| Parameter | Symbol | Conditions SOURCE = 0 V; $T_J$ = -40 to 125 °C (Unless Otherwise Specified) | | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| **Voltage Monitor (V) and External Current Limit (X) Inputs (cont.)** | | | | | | | |
| **V Pin Remote ON/OFF Voltage** | $V_{V(TH)}$ | $T_J$ = 25 °C | | 0.8 | 1.0 | 1.6 | V |
| **X Pin Remote-ON/OFF Negative Threshold Current and Hysteresis** | $I_{REM(N)}$ | $T_J$ = 25 °C | Threshold | -35 | -27 | -20 | µA |
| | | | Hysteresis | | 5 | | |
| **V Pin Short-Circuit Current** | $I_{V(SC)}$ | $T_J$ = 25 °C | $V_V = V_C$ | 300 | 400 | 500 | µA |
| **X Pin Short-Circuit Current** | $I_{X(SC)}$ | $V_X$ = 0 V | Normal Mode | -260 | -200 | -140 | µA |
| | | | Auto-Restart Mode | -95 | -75 | -55 | |
| **V Pin Voltage (Positive Current)** | $V_V$ | $I_V = I_{OV}$ | | 2.83 | 3.0 | 3.25 | V |
| **V Pin Voltage Hysteresis (Positive Current)** | $V_{V(HYST)}$ | | $I_V = I_{OV}$ | 0.2 | 0.5 | | V |
| **X Pin Voltage (Negative Current)** | $V_X$ | | $I_X$ = -50 µA | 1.23 | 1.30 | 1.37 | V |
| | | | $I_X$ = -150 µA | 1.15 | 1.22 | 1.29 | |
| **Maximum Duty Cycle Reduction Onset Threshold Current** | $I_{V(DC)}$ | $I_C \geq I_B$, $T_J$ = 25 °C | | 18.9 | 22.0 | 24.2 | µA |
| **Maximum Duty Cycle Reduction Slope** | | $T_J$ = 25 °C | $I_{V(DC)} < I_V <$48 µA | | -1.0 | | %/µA |
| | | | $I_V \geq$48 µA | | -0.25 | | |
| **Remote-OFF DRAIN Supply Current** | $I_{D(RMT)}$ | $V_{DRAIN}$ = 150 V | X or V Pin Floating | | 0.6 | 1.0 | mA |
| | | | V Pin Shorted to CONTROL | | 1.0 | 1.6 | |
| **Remote-ON Delay** | $t_{R(ON)}$ | From Remote-ON to Drain Turn-On See Note C | 66 kHz | | 3.0 | | µs |
| | | | 132 kHz | | 1.5 | | |
| **Remote-OFF Set-up Time** | $t_{R(OFF)}$ | Minimum Time Before Drain Turn-On to Disable Cycle See Note C | 66 kHz | | 3.0 | | µs |
| | | | 132 kHz | | 1.5 | | |
| **Frequency Input** | | | | | | | |
| **FREQUENCY Pin Threshold Voltage** | $V_F$ | See Note B | | | 2.9 | | V |
| **FREQUENCY Pin Input Current** | $I_F$ | $T_J$ = 25 °C | $V_F = V_C$ | 10 | 55 | 90 | µA |

| Parameter | Symbol | Conditions<br>SOURCE = 0 V; $T_J$ = -40 to 125 °C<br>(Unless Otherwise Specified) | | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| **Circuit Protection** | | | | | | | |
| **Self Protection Current Limit (See Note D)** | $I_{LIMIT}$ | $T_J$ = 25 °C<br>di/dt = 625 mA/µs | | 2.800 | 3.01 | 3.222 | A |
| **Initial Current Limit** | $I_{INIT}$ | See Note C | | 0.70 × $I_{LIMIT(MIN)}$ | | | A |
| **Power Coefficient** | $P_{COEFF}$ | $T_J$ = 25 °C,<br>See Note E | $I_X \leq$ - 165 µA | 0.9 × $I^2f$ | $I^2f$ | 1.2 × $I^2f$ | $A^2kHz$ |
| | | | $I_X \leq$ - 117 µA | 0.9 × $I^2f$ | $I^2f$ | 1.2 × $I^2f$ | |
| **Leading Edge Blanking Time** | $t_{LEB}$ | $T_J$ = 25 °C<br>See Figure 23 | | | 220 | | ns |
| **Current Limit Delay** | $t_{IL(D)}$ | | | | 100 | | ns |
| **Thermal Shutdown Temperature** | | | | 135 | 142 | 150 | °C |
| **Thermal Shutdown Hysteresis** | | | | | 75 | | °C |
| **Power-Up Reset Threshold Voltage** | $V_{C(RESET)}$ | Figure 24 (S1 Open Condition) | | 1.75 | 3.0 | 4.25 | V |
| **Output** | | | | | | | |
| **ON-State Resistance** | $R_{DS(ON)}$ | $I_D$ = 400 mA | $T_J$ = 25 °C | | 2.0 | 2.30 | Ω |
| | | | $T_J$ = 100 °C | | 3.1 | 3.60 | |
| **Drain Supply Voltage** | | $T_J \leq$ 85 °C, See Note F | | 18 | | | V |
| | | | | 36 | | | |
| **OFF-State Drain Leakage Current** | $I_{DSS}$ | $V_V$ = Floating, Device Not Switching,<br>$V_{DS}$ = 580 V, $T_J$ = 125 °C | | | | 470 | µA |
| **Breakdown Voltage** | $BV_{DSS}$ | $V_V$ = Floating, Device Not Switching,<br>$T_J$ = 25 °C, See Note G | | 725 | | | V |
| **Rise Time** | $t_R$ | Measured in a Typical Flyback Converter Application | | | 100 | | ns |
| **Fall Time** | $t_F$ | | | | 50 | | ns |

| Parameter | Symbol | Conditions SOURCE = 0 V; $T_J$ = -40 to 125 °C (Unless Otherwise Specified) | | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|---|
| **Supply Voltage Characteristics** | | | | | | | |
| **Control Supply/ Discharge Current** | $I_{CD1}$ | Output MOSFET Enabled $V_X$, $V_V$ = 0 V | 66 kHz Operation | 0.9 | 1.4 | 2.3 | mA |
| | | | 132 kHz Operation | 1.2 | 1.7 | 2.4 | |
| | $I_{CD2}$ | Output MOSFET Disabled $V_X$, $V_V$ = 0 V | | 0.3 | 0.5 | 1.2 | |

NOTES:

A. Derived during test from the parameters $DC_{MAX}$, $I_B$ and $I_{C(OFF)}$ at 132 kHz.

B. For specifications with negative values, a negative temperature coefficient corresponds to an increase in magnitude with increasing temperature, and a positive temperature coefficient corresponds to a decrease in magnitude with increasing temperature.

C. Guaranteed by characterization. Not tested in production.

D. For externally adjusted current limit values, please refer to Figures 36 and 37 (Current Limit vs. External Current Limit Resistance) in the Typical Performance Characteristics section. The tolerance specified is only valid at full current limit.

E. $I^2f$ calculation is based on typical values of $I_{LIMIT}$ and $f_{OSC,}$ i.e. $I_{LIMIT(TYP)}{}^2 \times f_{OSC}$, where $f_{OSC}$ = 66 kHz or 132 kHz depending on FREQUENCY pin connection. See $f_{OSC}$ specification for detail.

F. The device will start up at 18 $V_{DC}$ drain voltage. The capacitance of electrolytic capacitors drops significantly at temperatures below 0 °C. For reliable start-up at 18 V in sub-zero temperatures, designers must ensure that circuit capacitors meet recommended capacitance values.

G. Breakdown voltage may be checked against minimum $BV_{DSS}$ specification by ramping the DRAIN pin voltage up to but not exceeding minimum $BV_{DSS}$.

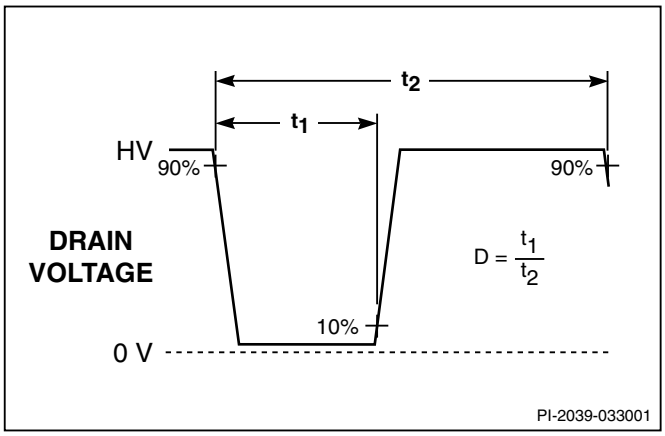



Figure 21. Duty Cycle Measurement.

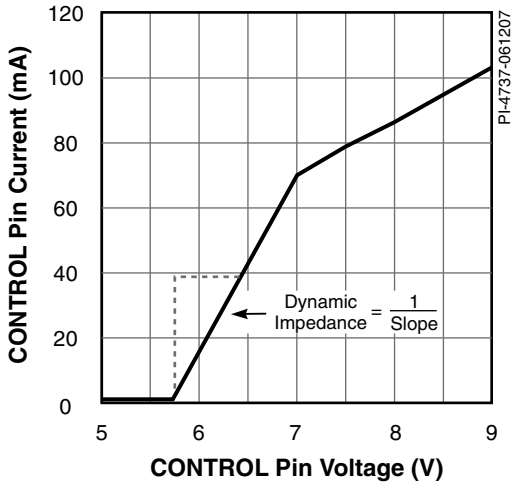



Figure 22. CONTROL Pin I-V Characteristic.

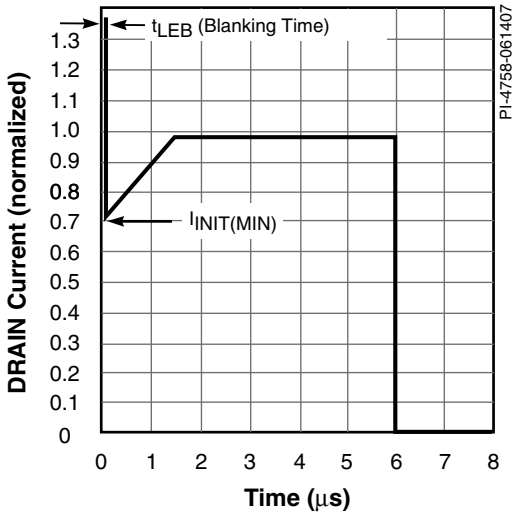
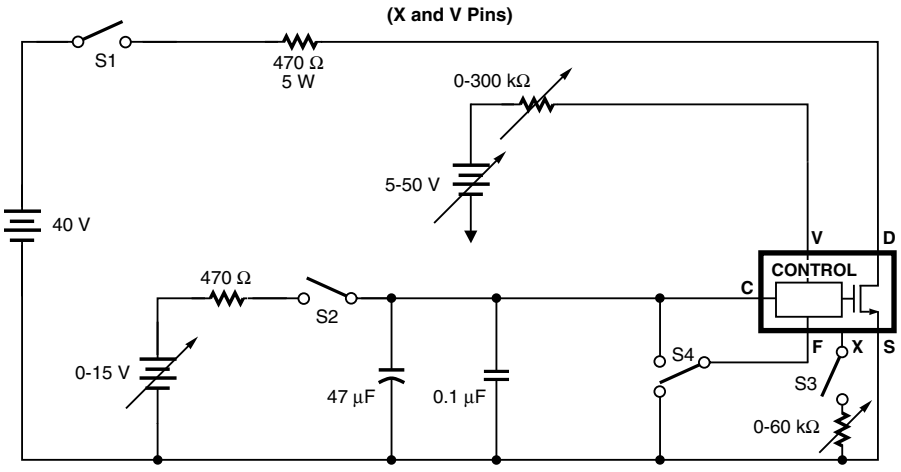



Figure 23. Drain Current Operating Envelope.




**NOTES:** 1. This test circuit is not applicable for current limit or output characteristic measurements.

Figure 24. TOPSwitch-JX General Test Circuit.

## Typical Performance Characteristics

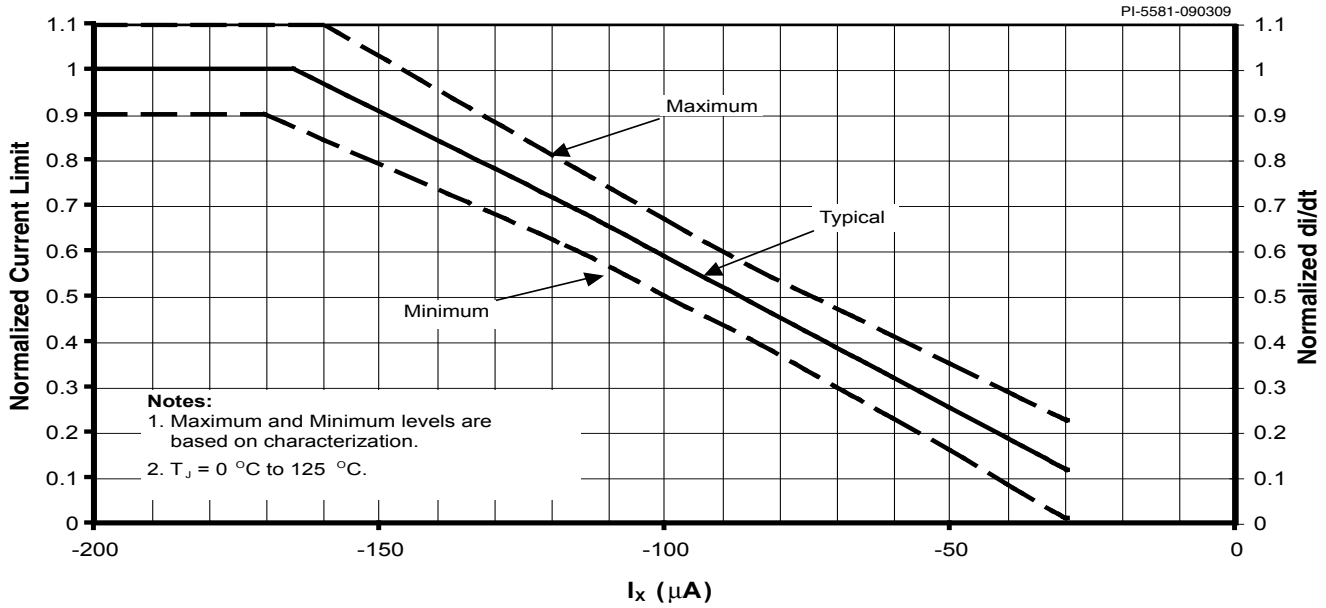



Figure 25. Normalized Current Limit vs. X Pin Current.

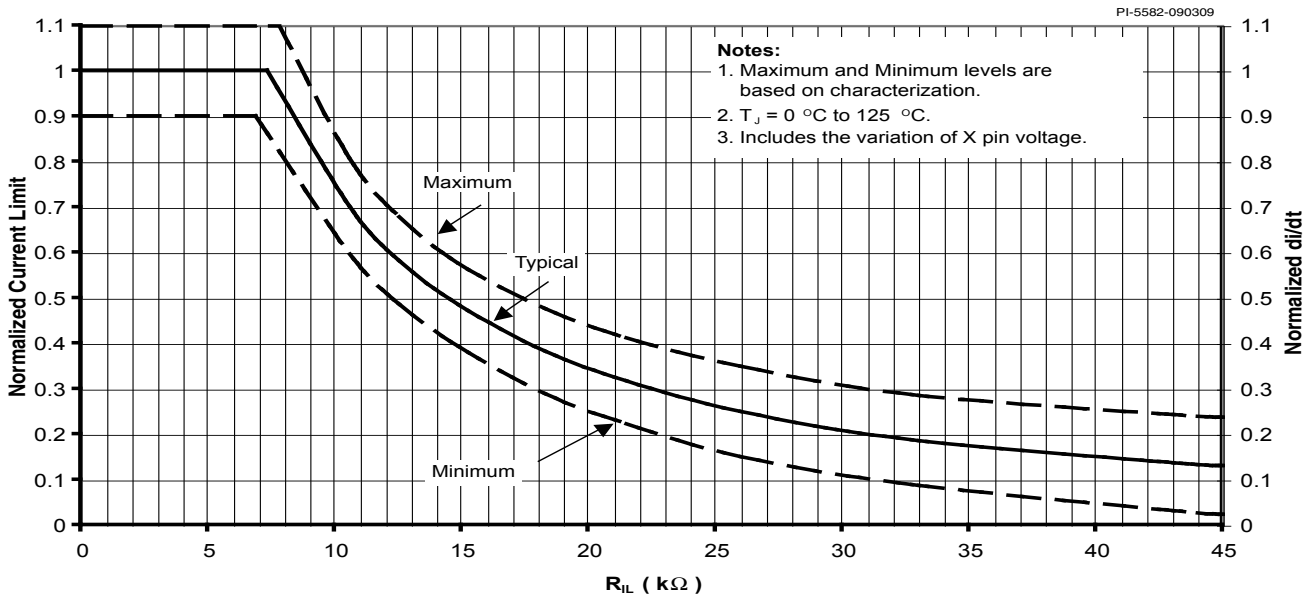



Figure 26. Normalized Current Limit vs. External Current Limit Resistance.

## Typical Performance Characteristics (cont.)

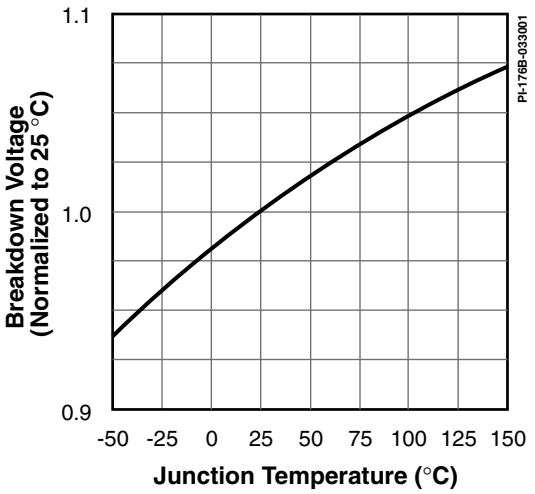



Figure 27. Breakdown Voltage vs. Temperature.

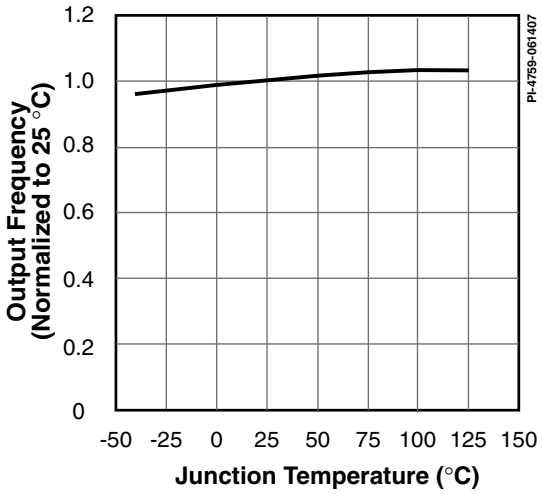



Figure 28. Frequency vs. Temperature.

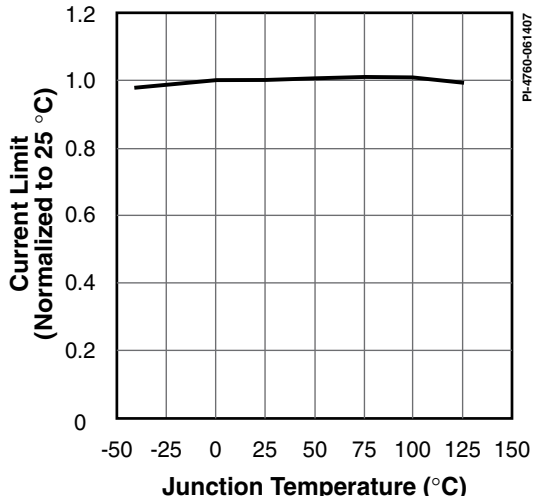



Figure 29. Internal Current Limit vs. Temperature.

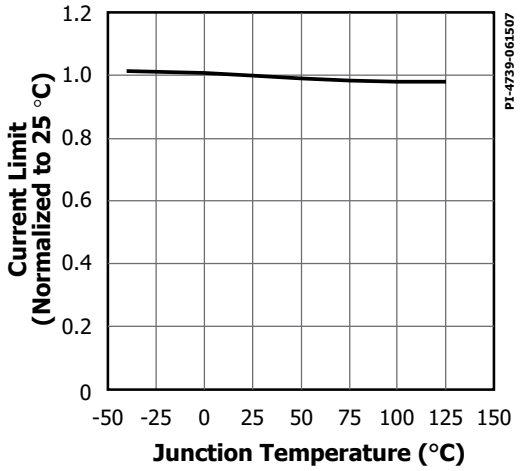



Figure 30. External Current Limit vs. Temperature with $R_{IL}$ = 10.5 kΩ.

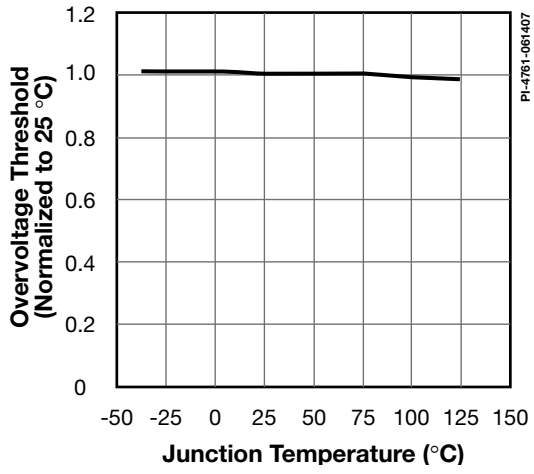



Figure 31. Overvoltage Threshold vs. Temperature.

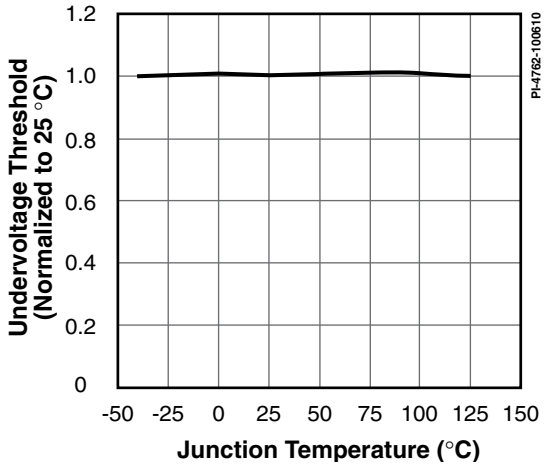



Figure 32. Undervoltage Threshold vs. Temperature.

## Typical Performance Characteristics (cont.)

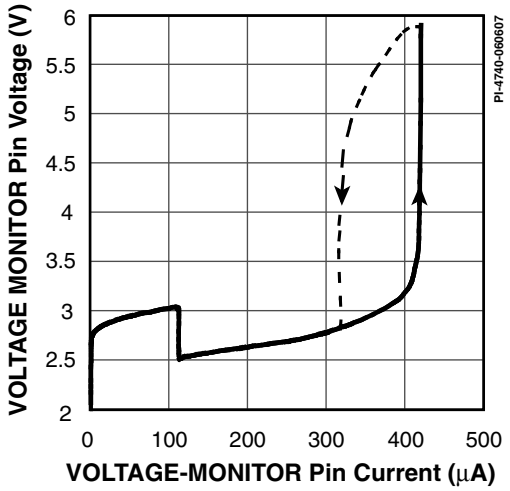



Figure 33. VOLTAGE-MONITOR Pin vs. Current.

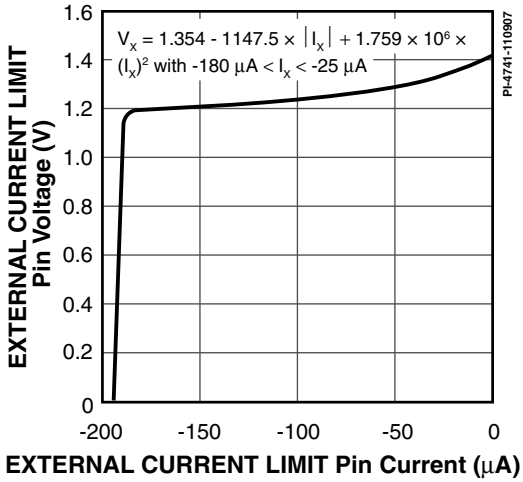



Figure 34. EXTERNAL CURRENT LIMIT Pin Voltage vs. Current.

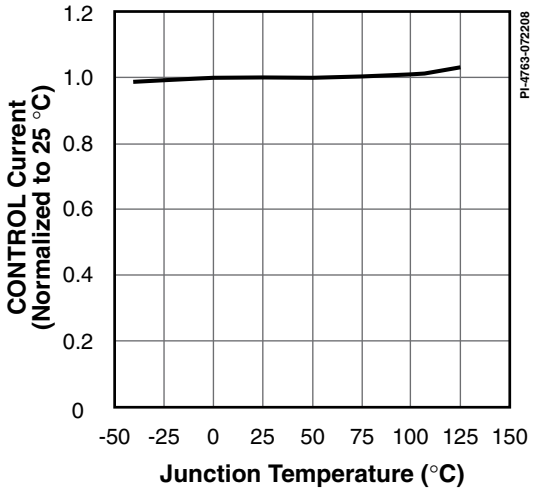



Figure 35. Control Current Out at 0% Duty Cycle vs. Temperature.

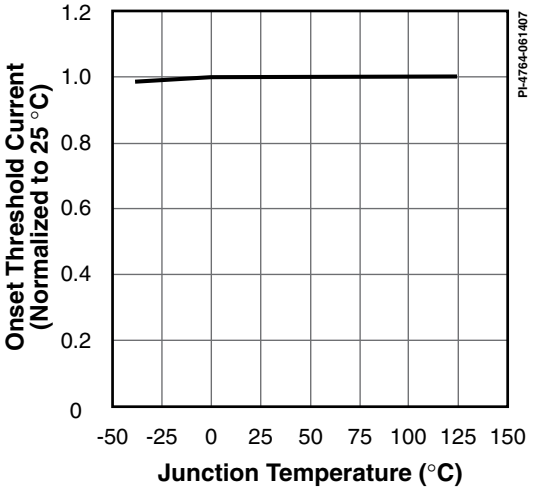



Figure 36. Maximum Duty Cycle Reduction Onset Threshold Current vs. Temperature.

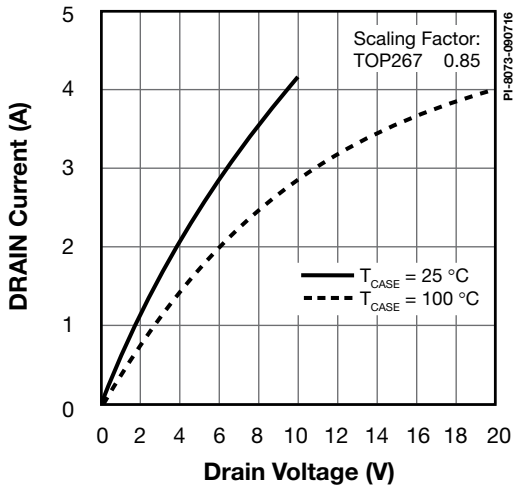



Figure 37. Output Characteristics.

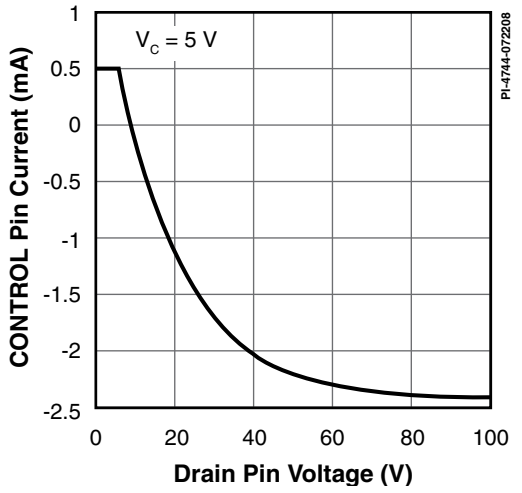



Figure 38. $I_C$ vs. DRAIN Voltage.

## Typical Performance Characteristics (cont.)

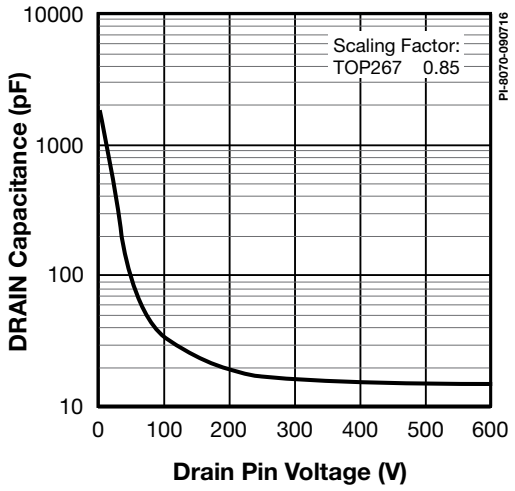



Figure 39. $C_{OSS}$ vs. DRAIN Voltage.

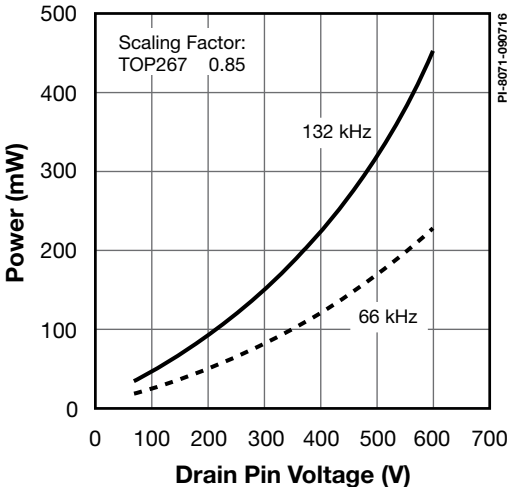



Figure 40. DRAIN Capacitance Power.

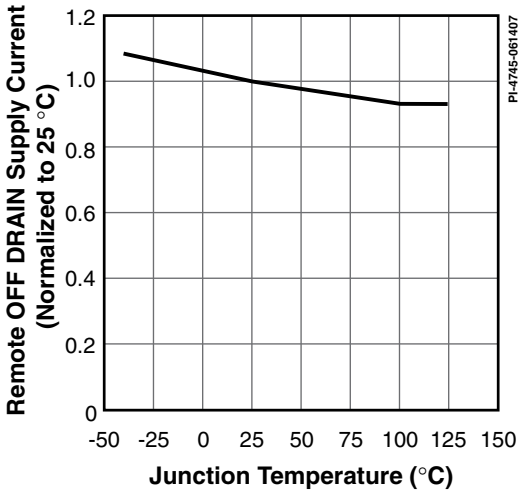
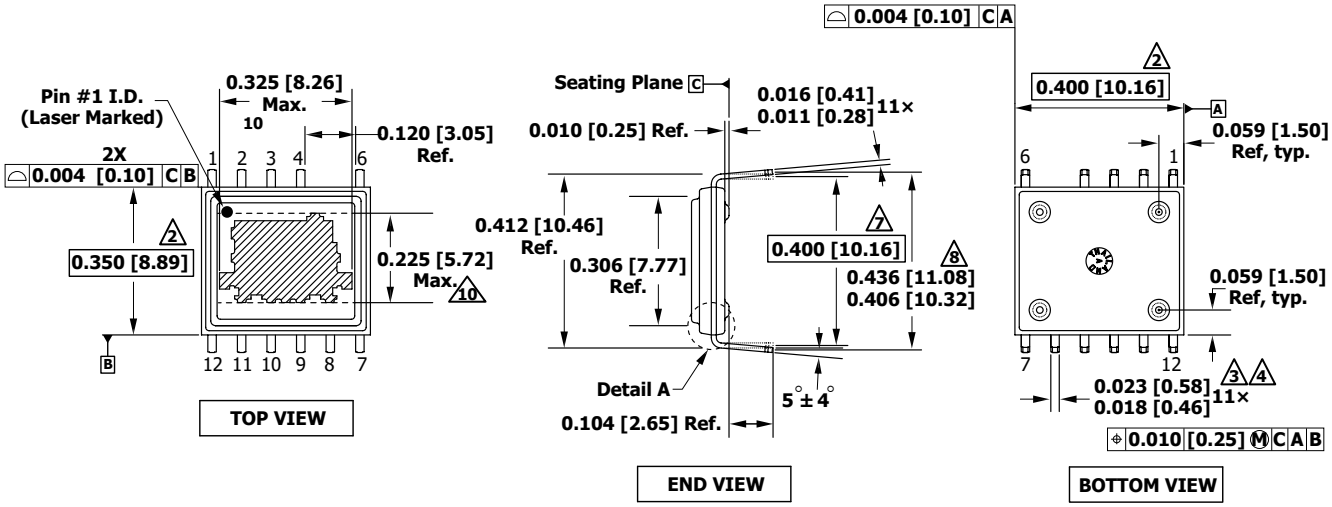
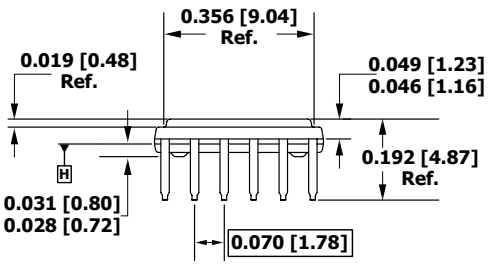
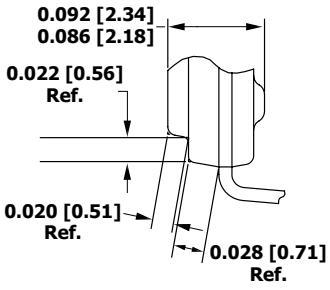


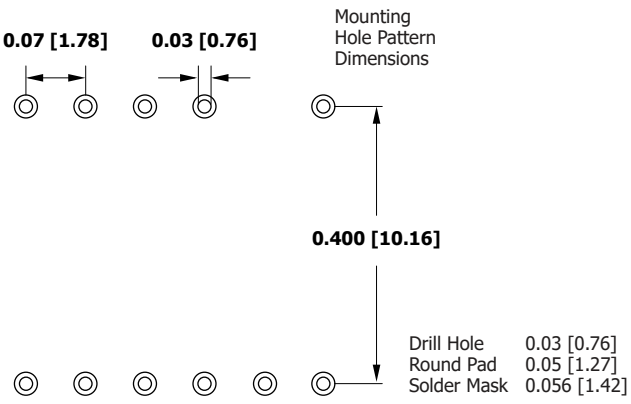

Figure 41. Remote-OFF DRAIN Supply Current vs. Temperature.

# eDIP-12B (V Package)



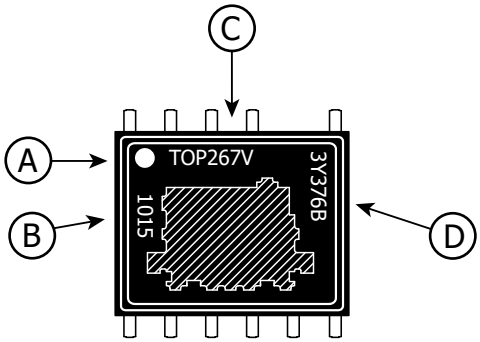




**Notes:**

1. Dimensioning and tolerancing per ASME Y14.5M-1994.
2. Dimensions noted are determined at the outer-most extremes of the plastic body exclusive of mold flash, tie bar burrs, gate burrs, and interlead flash, but including any mismatch between the top and bottom of the plastic body. Maximum mold protrusion is 0.007 [0.18] per side.
3. Dimensions noted are inclusive of plating thickness.
4. Does not include inter-lead flash or protrusions.
5. Controlling dimensions in inches [mm].
6. Datums A and B to be determined at Datum H.
7. Measured with the leads constrained to be perpendicular to Datum C.
8. Measured with the leads unconstrained.
9. Lead numbering per JEDEC SPP-012.
10. Exposed pad is nominally located at the center-line of Datums A and B. "Max" dimensions noted include both size and positional tolerances.

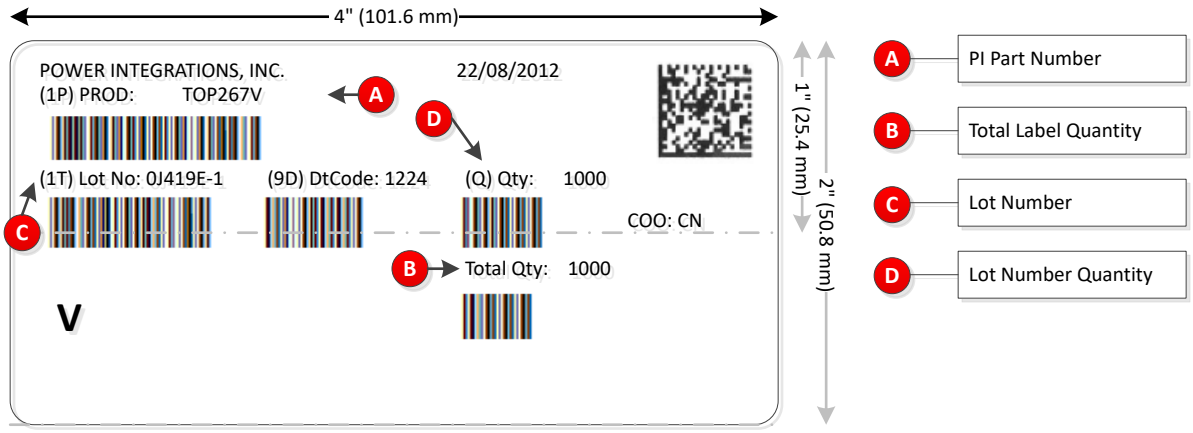
PI-5556b-031820

## eDIP-12B (V) Plastic Package Marking

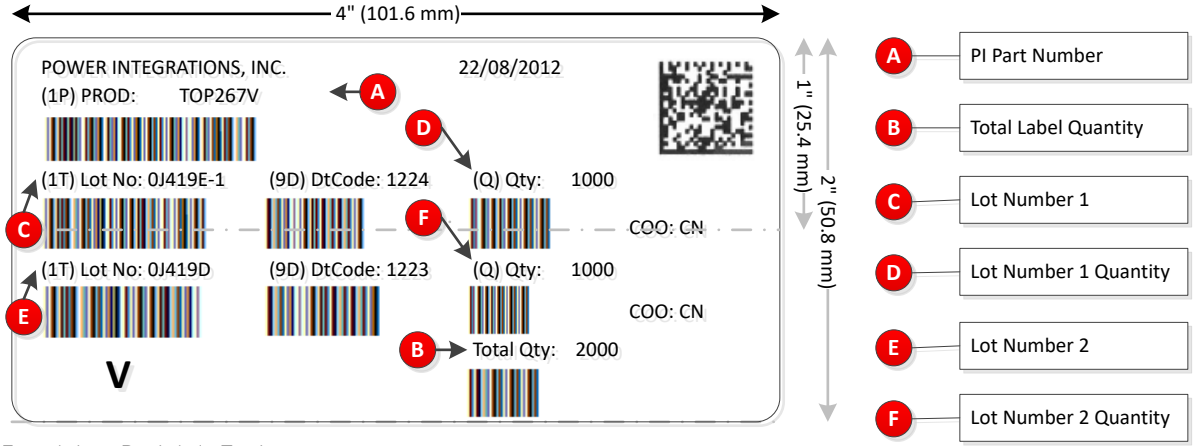



A. Power Integrations Registered Trademark
B. Assembly Date Code (last two digits of year followed by 2-digit work week)
C. Product Identification (Part #/Package Type [V = eDIP-12])
D. Lot Identification Code

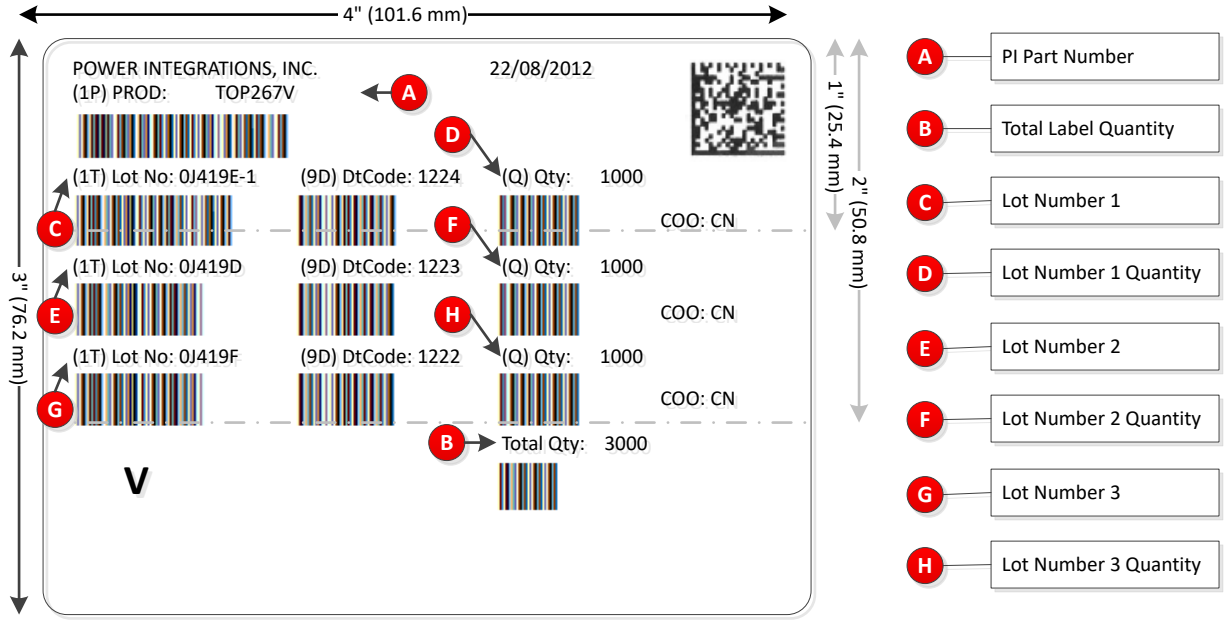
PI-5933a-032020




Example Inner Box Label – One Lot.




Example Inner Box Label – Two Lots.



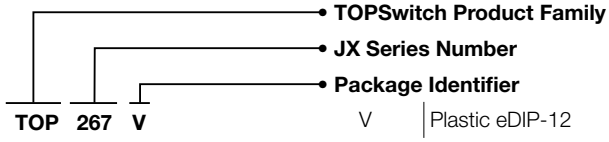

Example Inner Box Label – Three Lots. Note: the 1D and 2D barcodes are for design purposes only.

Example Outer Box Label (not to scale).

## Unique IC Information Table

| Part Number | Base Part Number | Variation |
|---|---|---|
| TOP267V | TOP267VG | Removed latch option |

## Part Ordering Information



| Revision | Notes | Date |
|---|---|---|
| A | Data sheet release. | 09/16 |
| B | Updated Package Marking and Package drawing. | 03/20 |
| C | Removed $I_{OV(AR)}$ parameter on page 8. | 12/22 |

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A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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