

16A, 50V - 1000V High Efficient Rectifier

FEATURES

- AEC-Q101 qualified available
- Low forward voltage, high current capability
- Low thermal resistance
- Low power loss, high efficiency
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

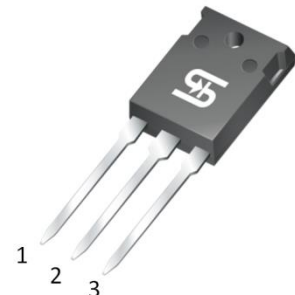
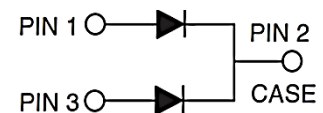
APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Lighting application
- Snubber
- Freewheeling application

MECHANICAL DATA

- Case: TO-247AD (TO-3P)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Mounting torque: 1.13 N·m maximum
- Polarity: As marked
- Weight: 5.60g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	16	A
V_{RRM}	50 - 1000	V
I_{FSM}	200	A
T_{JMAX}	150	°C
Package	TO-247AD (TO-3P)	
Configuration	Dual dies	


TO-247AD (TO-3P)


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	HER 1601 PT	HER 1602 PT	HER 1603 PT	HER 1604 PT	HER 1605 PT	HER 1606 PT	HER 1607 PT	HER 1608 PT	UNIT
Marking code on the device		HER 1601 PT	HER 1602 PT	HER 1603 PT	HER 1604 PT	HER 1605 PT	HER 1606 PT	HER 1607 PT	HER 1608 PT	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	300	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V
Forward current	I_F	16								A
Surge peak forward current 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200								A
Junction temperature	T_J	-55 to +150								°C
Storage temperature	T_{STG}	-55 to +150								°C

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT			
Forward voltage per diode ⁽¹⁾	HER1601PT HER1602PT HER1603PT HER1604PT	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.0	V			
	HER1605PT			-	1.3	V			
	HER1606PT HER1607PT HER1608PT			-	1.7	V			
	Reverse current @ rated V_R per diode ⁽²⁾			I_R	-	10	μA		
					-	500	μA		
Junction capacitance per diode	HER1601PT HER1602PT HER1603PT HER1604PT HER1605PT	1MHz, $V_R = 4.0\text{V}$	C_J	85	-	pF			
	HER1606PT HER1607PT HER1608PT			60	-	pF			
	Reverse recovery time			HER1601PT HER1602PT HER1603PT HER1604PT HER1605PT	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	t_{rr}	-	50	ns
				HER1606PT HER1607PT HER1608PT			-	80	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
HER16xPT	TO-247AD (TO-3P)	30 / Tube
HER16xPTH	TO-247AD (TO-3P)	30 / Tube

Notes:

1. "x" defines voltage from 50V(HER1601PT) to 1000V(HER1608PT)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

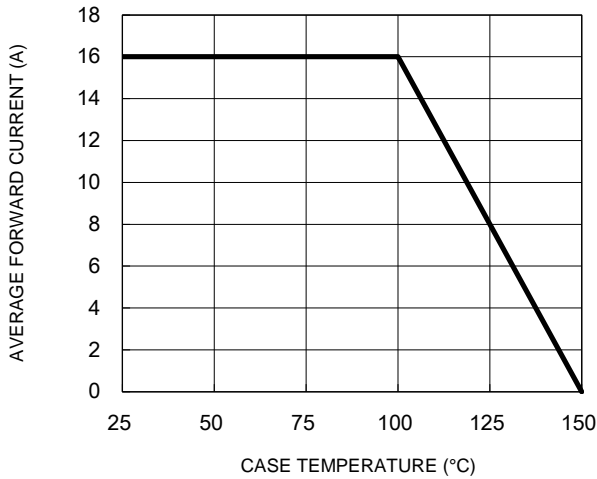


Fig.2 Typical Junction Capacitance

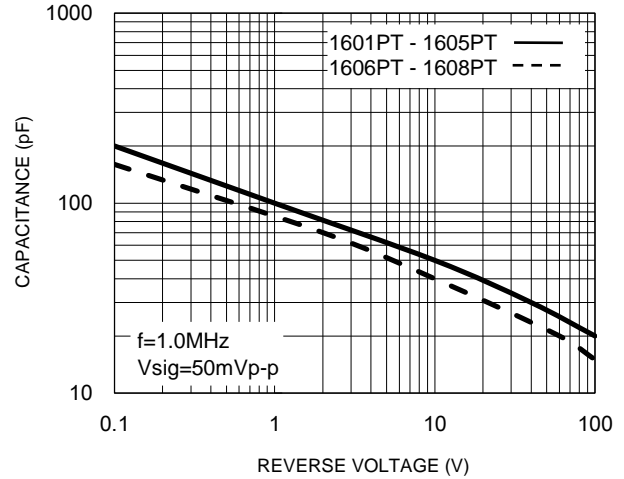


Fig.3 Typical Reverse Characteristics

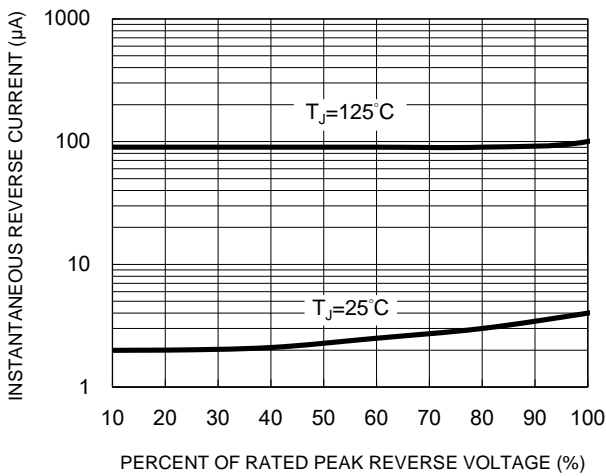


Fig.4 Typical Forward Characteristics

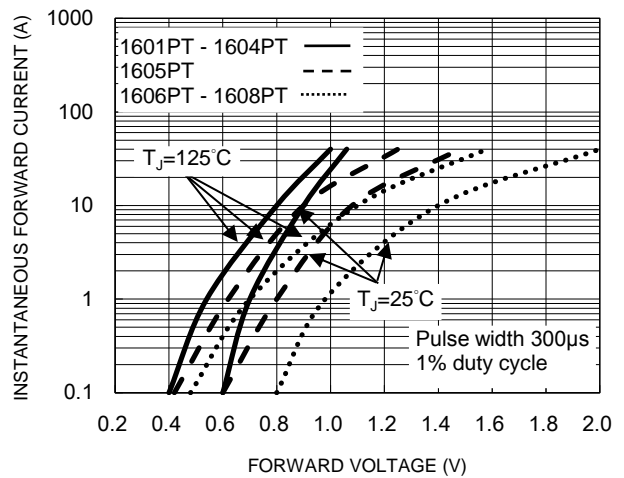
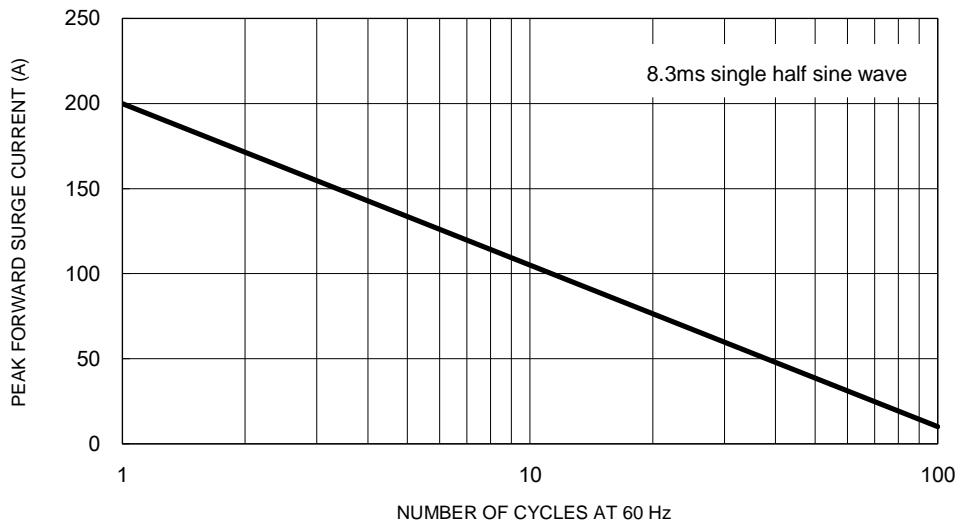


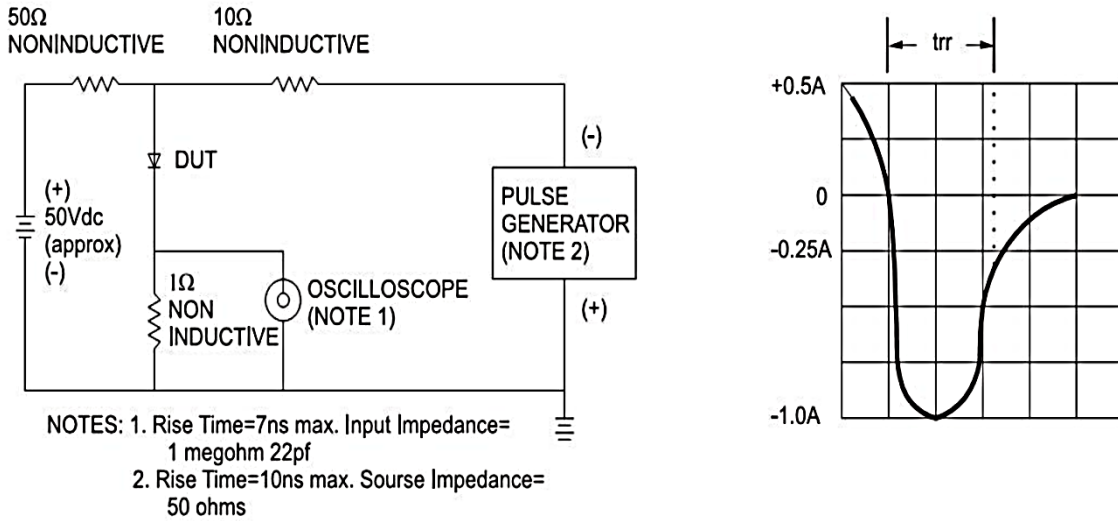
Fig.5 Maximum Non-Repetitive Forward Surge Current



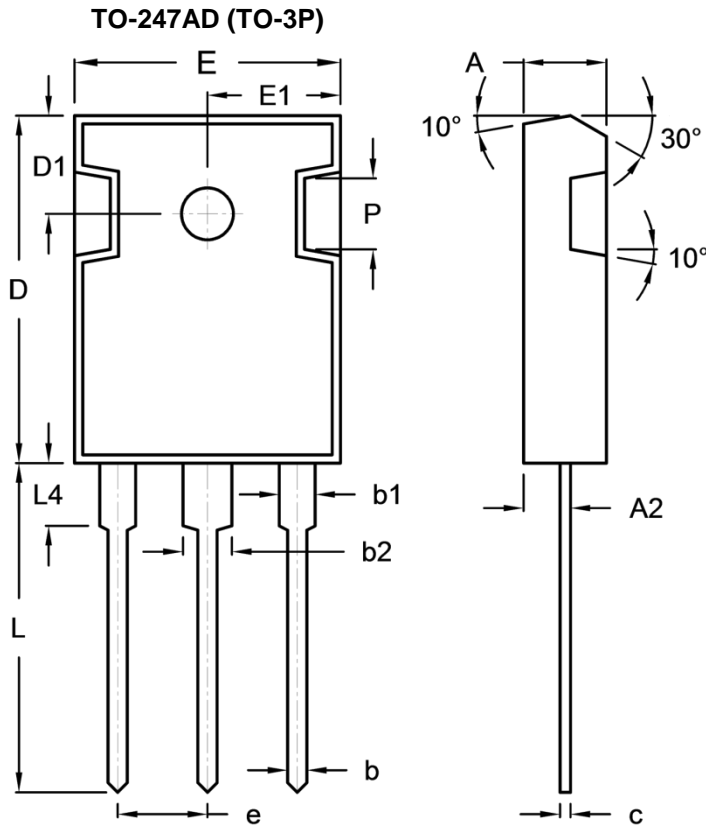
CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram

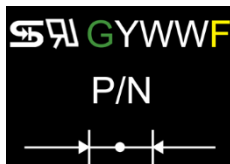


PACKAGE OUTLINE DIMENSIONS



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.90	5.16	0.193	0.203
A2	2.70	3.00	0.106	0.118
b	1.12	1.22	0.044	0.048
b1	1.93	2.18	0.076	0.086
b2	2.97	3.22	0.117	0.127
c	0.51	0.76	0.020	0.030
D	20.80	21.30	0.819	0.839
D1	5.70	6.20	0.224	0.244
E	15.90	16.40	0.626	0.646
E1	7.90	8.20	0.311	0.323
e	5.20	5.70	0.205	0.224
H	2.90	3.40	0.114	0.134
L	19.70	20.20	0.776	0.795
L4	3.50	4.10	0.138	0.161
P	-	4.30	-	0.169

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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