



**THE DATASHEET OF  
30CTQ050**



## 30CTQ050/60/30CTQ050/60S /30CTQ050/60-1 SCHOTTKY RECTIFIER

**Applications:**

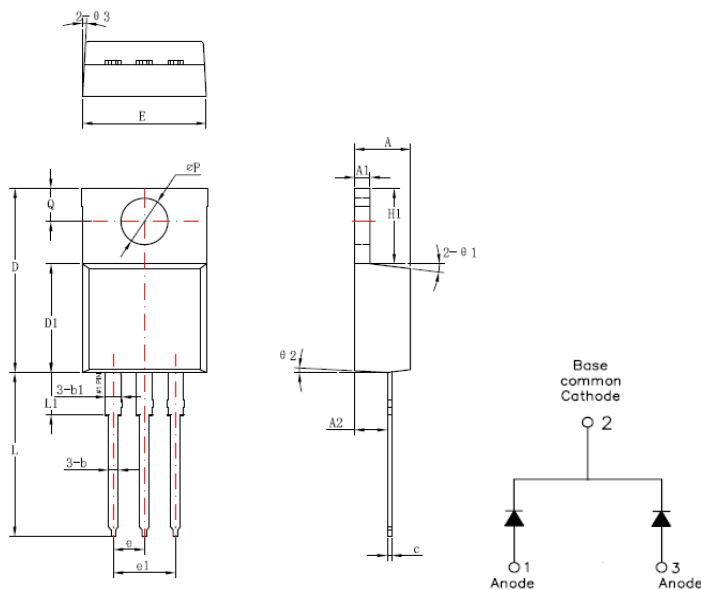
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

**Features:**

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

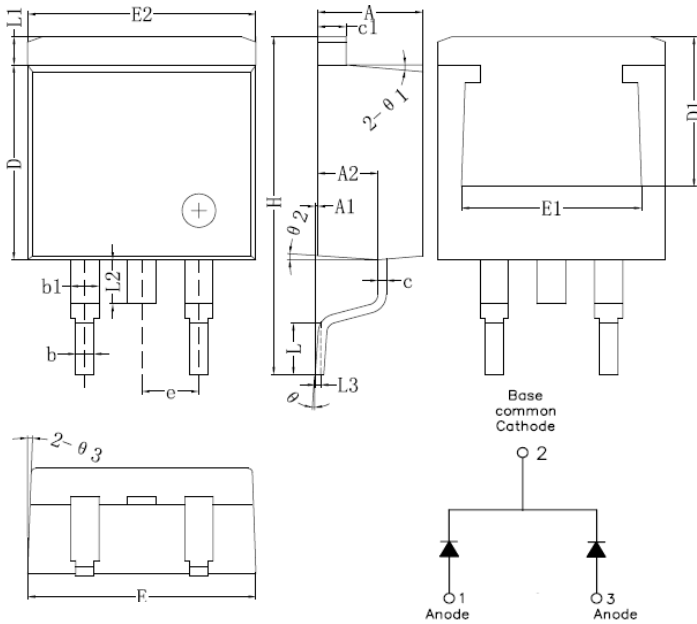
Case styles		
<p><b>30CTQ...</b></p>  <p><b>TO-220AB</b></p>	<p><b>30CTQ...S</b></p>  <p><b>D<sup>2</sup>PAK</b></p>	<p><b>30CTQ...-1</b></p>  <p><b>TO-262</b></p>

**Mechanical Dimensions: In Inches / mm**



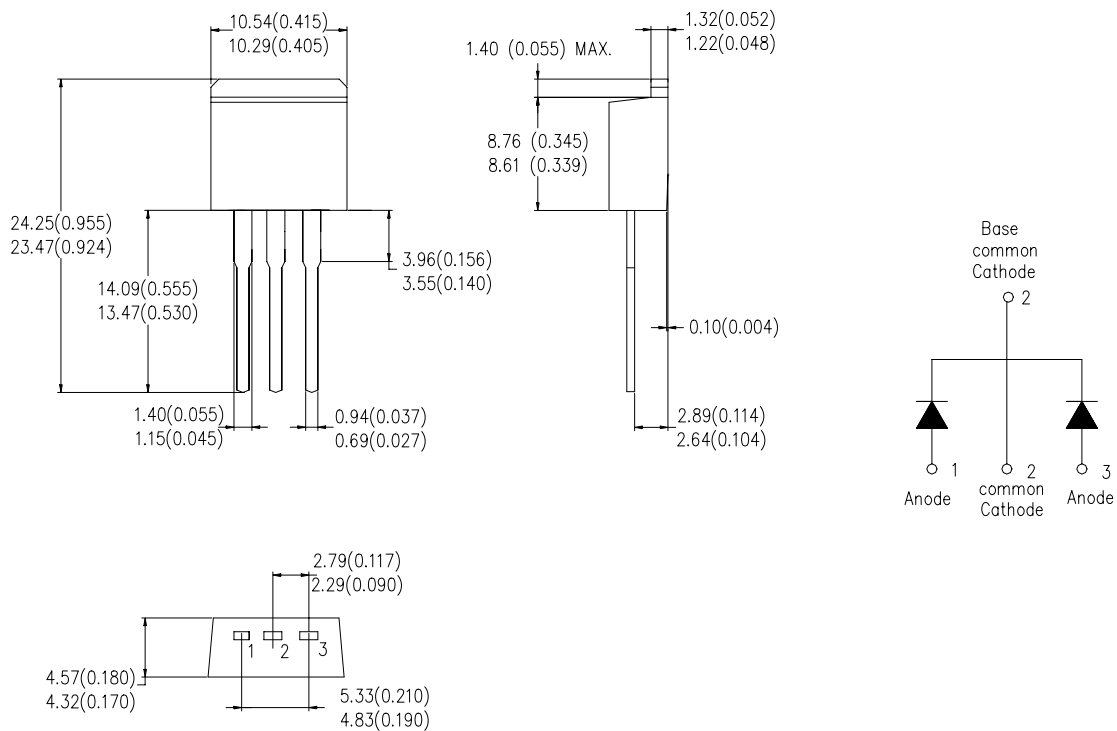
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

**TO-220AB**



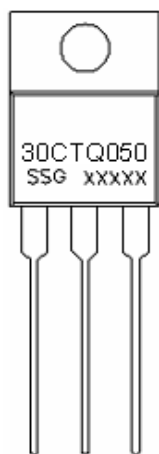
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

**D<sup>2</sup>PAK**

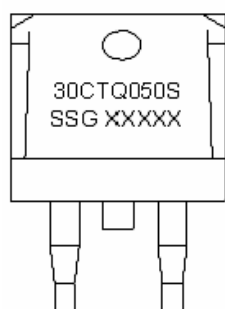


**TO-262**

### Marking Diagram:



30CTQ050



30CTQ050S

Where XXXXX is YYWWL

30CTQ050 =Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

### Ordering Information:

Device	Package	Shipping
30CTQ...	TO-220AB (Pb-Free)	50pcs / tube
30CTQ...S	D <sup>2</sup> PAK (Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	-	50(30CTQ050/S)	V
Working Peak Reverse Voltage	$V_{RWM}$		60(30CTQ060/S)	
DC Blocking Voltage	$V_R$			
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 105^\circ\text{C}$ , rectangular wave form	30	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	310	A



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30CTQ050/60S  
30CTQ050/60-1

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### Electrical Characteristics:

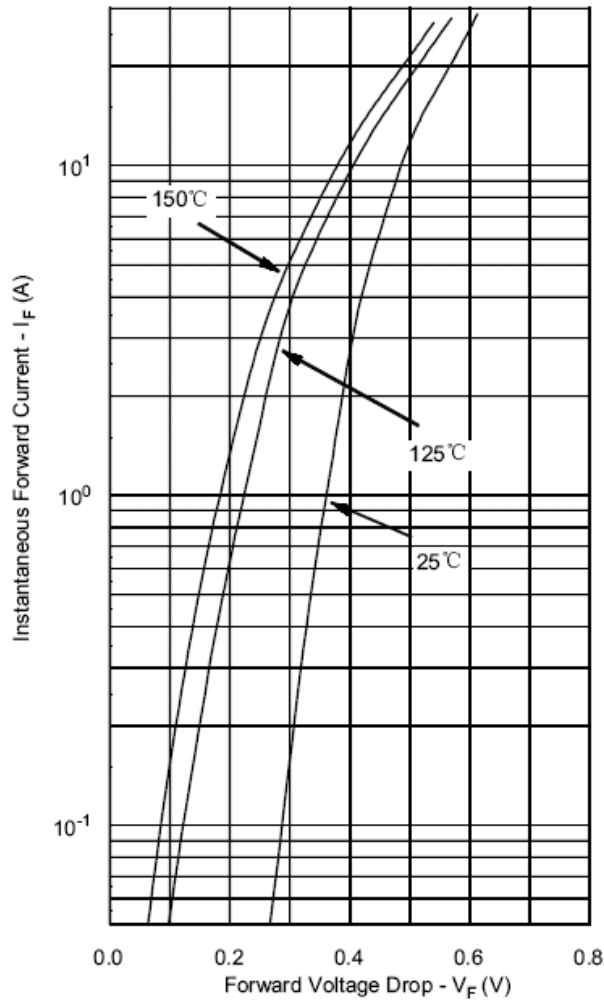
Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop (per leg) *	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25 °C	0.62	V
	V <sub>F2</sub>	@ 15A, Pulse, T <sub>J</sub> = 125 °C	0.56	V
Reverse Current(per leg) *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125°C	45	mA
Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	720	pF
Voltage Rate of Change	dv/dt	-	10,000	V/μs

\* Pulse Width < 300μs, Duty Cycle <2%

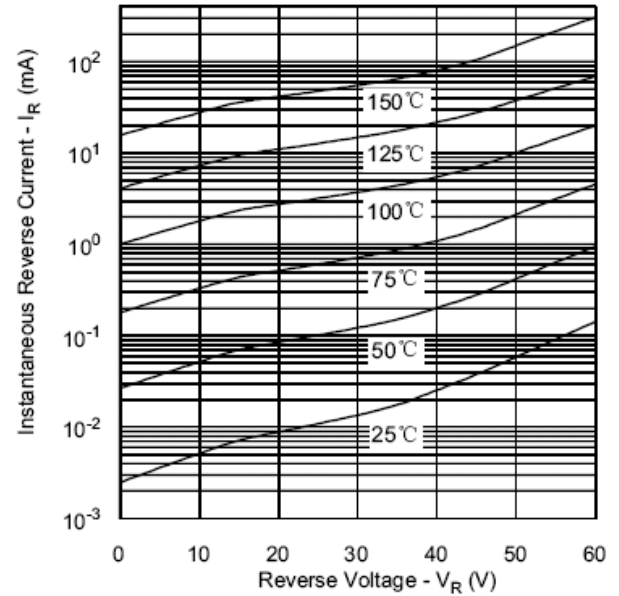
### Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +150	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	3.25	°C/W
Approximate Weight	wt	-	2/1.85	g
Case Style	TO-220AB D <sup>2</sup> PAK TO-262(Suffix <sup>1</sup> -1" for TO-262;"S" for D <sup>2</sup> PAK)			

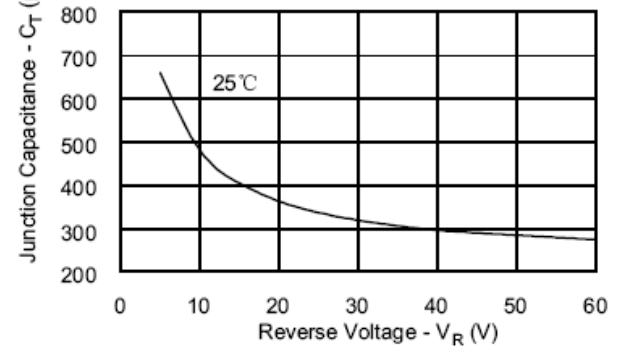
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**





30CTQ050/60  
30CTQ050/60S  
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