



SENSITRON

SEMICONDUCTOR

6TQ...

6TQ...S

TECHNICAL DATA DATA SHEET

6TQ.../6TQ...S SCHOTTKY RECTIFIER

Applications:

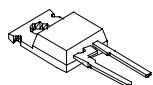
- Switching power supply
 - Converters
 - Free-Wheeling diodes
 - Reverse battery protection

Features:

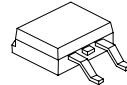
- 175° C TJ operation
 - High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
 - Low forward voltage drop
 - High frequency operation
 - Guard ring for enhanced ruggedness and long term reliability

Case Styles

6TQ...



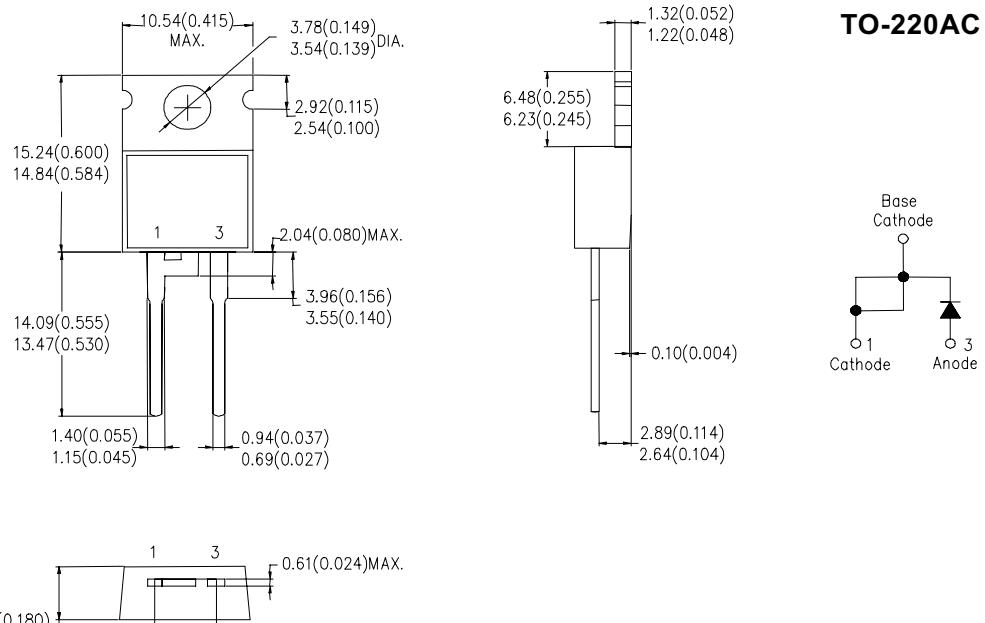
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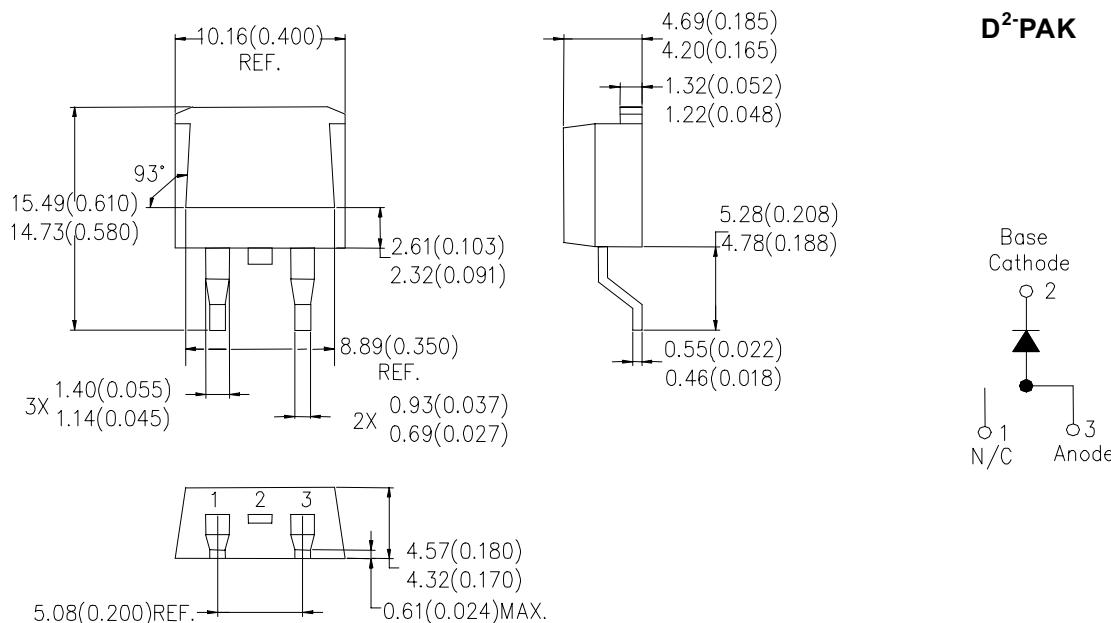
TO-220

D²PAK

Mechanical Dimensions: In Inches / mm



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 - World Wide Web Site - <http://www.sensitron.com> • E-Mail Address - sales@sensitron.com •



Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V _{RWM}	-	35(6TQ035) 40(6TQ040) 45(6TQ045)	V
Max. Average Forward Current	I _{F(AV)}	50% duty cycle @ T _C = 164°C, rectangular wave form	6	A
Max. Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3 ms, half Sine pulse	160	A
Non-Repetitive Avalanche Energy	E _{AS}	T _J = 25 °C, I _{AS} = 1.20 A, L = 11.10mH	8	mJ
Repetitive Avalanche Current	I _{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T _J max. V _A = 1.5 x V _R typical	1.2	A

Electrical Characteristics:

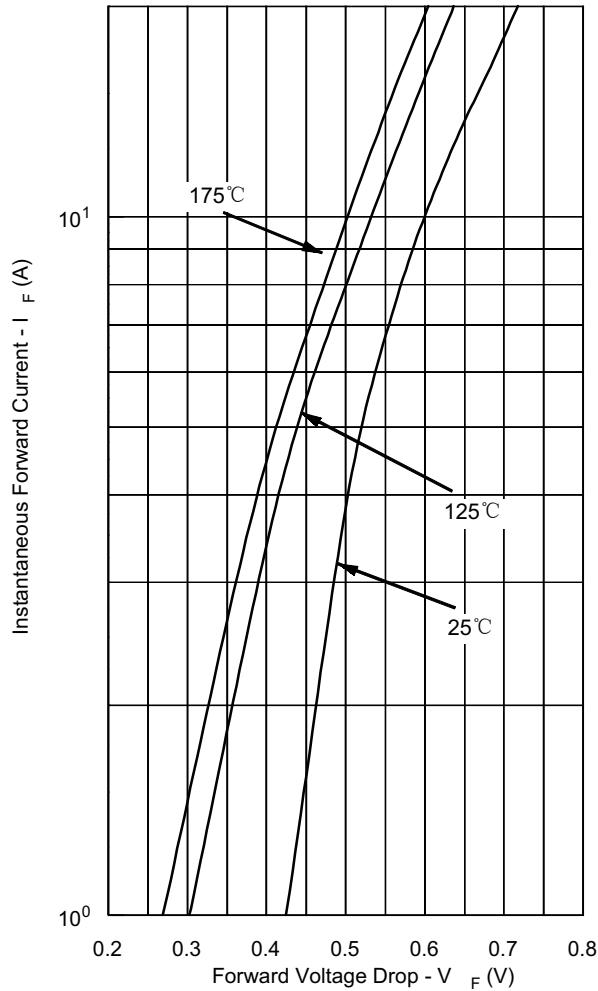
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop	V _{F1}	@ 6 A, Pulse, T _J = 25 °C @ 12 A, Pulse, T _J = 25 °C	0.60 0.73	V
	V _{F2}	@ 6 A, Pulse, T _J = 125 °C @ 12 A, Pulse, T _J = 125 °C	0.53 0.64	V
Max. Reverse Current	I _{R1}	@ V _R = Rated V _R , Pulse, T _J = 25 °C	0.8	mA
	I _{R2}	@ V _R = Rated V _R , Pulse, T _J = 125 °C	7	mA
Max. Junction Capacitance	C _T	@ V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	400	pF
Typical Series Inductance	L _S	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/µs

* Pulse Width < 300 μ s, Duty Cycle < 2%

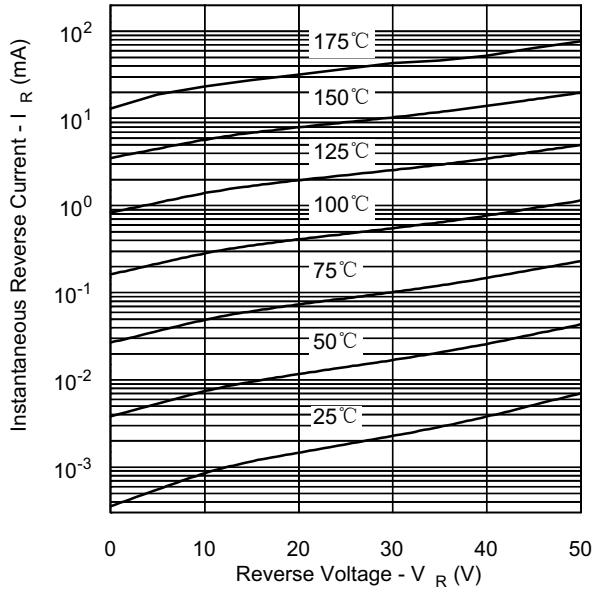
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +175	°C
Max. Storage Temperature	T_{stg}	-	-55 to +175	°C
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	2.2	°C/W
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2	g
Mounting Torque	T_M	-	6 (min) 12 (max)	Kg-cm
Case Style	TO-220 D ² PAK (Suffix "s" for D ² PAK; "MBRB xxxx" for D ² PAK)			

Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

