TECHNICAL DATA
DATA SHEET

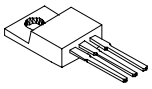
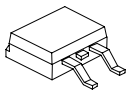
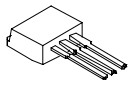
16CTQ…/16CTQ…S/16CTQ…-1
SCHOTTKY RECTIFIER

Applications:

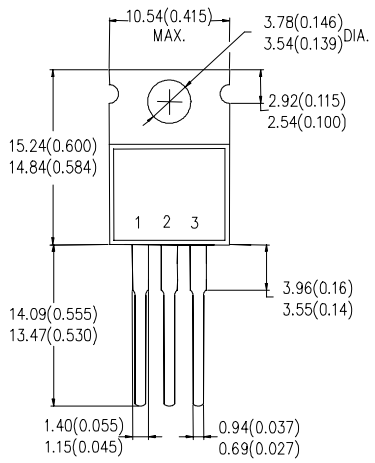
- **Switching power supply • Converters • Free-Wheeling diodes • Reverse battery protection**

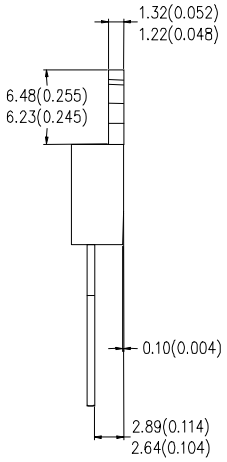
Features:

- **175°C T_J operation**
- **Center tap TO-220 package**
- **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**

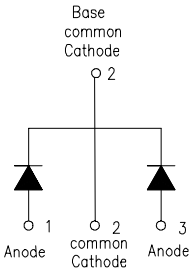
Case Styles		
16CTQ…	**16CTQ…S**	**16CTQ…-1**
		
TO-220	**D^2PAK**	**TO-262**

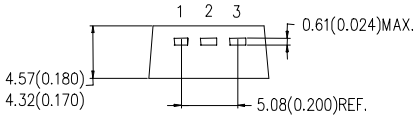
Mechanical Dimensions: In Inches / mm



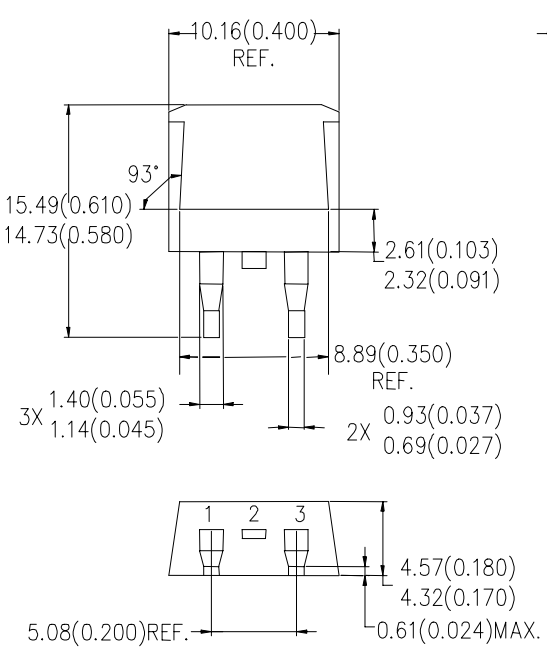


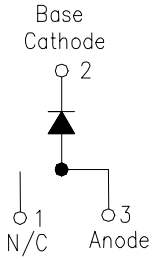
TO-220AB



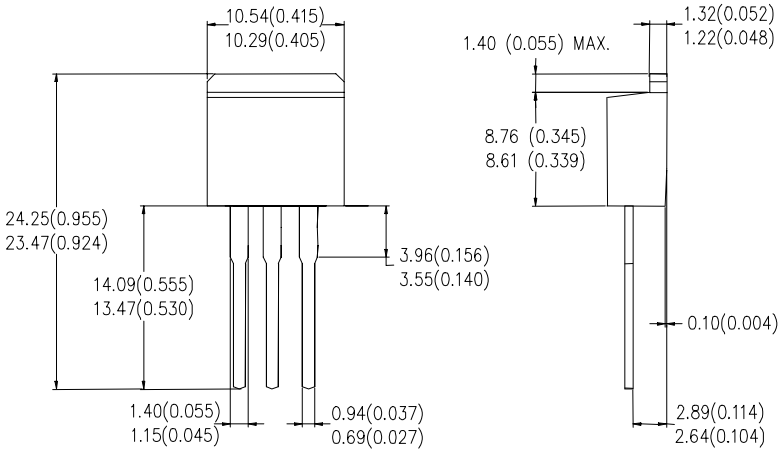


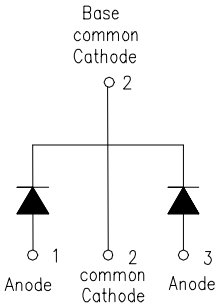
D²-PAK

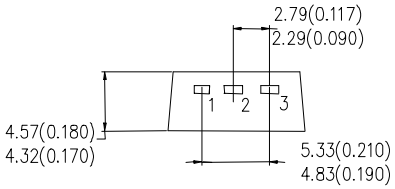

10.16(0.400)
REF.
93°
15.49(0.610)
14.73(0.580)
2.61(0.103)
2.32(0.091)
8.89(0.350)
REF.
3X 1.40(0.055)
1.14(0.045)
2X 0.93(0.037)
0.69(0.027)
4.69(0.185)
4.20(0.165)
1.32(0.052)
1.22(0.048)
5.28(0.208)
4.78(0.188)
0.55(0.022)
0.46(0.018)
1 2 3
4.57(0.180)
4.32(0.170)
5.08(0.200)REF.
0.61(0.024)MAX.


Base
Cathode
2
1
N/C
3
Anode

TO-262


10.54(0.415)
10.29(0.405)
24.25(0.955)
23.47(0.924)
14.09(0.555)
13.47(0.530)
3.96(0.156)
3.55(0.140)
1.40(0.055)
1.15(0.045)
0.94(0.037)
0.69(0.027)
1.40 (0.055) MAX.
1.32(0.052)
1.22(0.048)
8.76 (0.345)
8.61 (0.339)
0.10(0.004)
2.89(0.114)
2.64(0.104)


Base
common
Cathode
2
1
Anode
2
common
Cathode
3
Anode


2.79(0.117)
2.29(0.090)
1 2 3
4.57(0.180)
4.32(0.170)
5.33(0.210)
4.83(0.190)

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	60(16CTQ060.) 80(16CTQ080.) 100(16CTQ100.)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @T_C =148°C, rectangular wave form	8(per leg) 16(Per Device)	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	330	A
Non-Repetitive Avalanche Energy (per leg)	E_{AS}	T_J = 25 °C, I_{AS} = 0.50A, L =60 mH	7.50	mJ
Repetitive Avalanche Current (per leg)	I_{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T_J max. V_A = 1.5 x V_R typical	0.50	A

Electrical Characteristics:

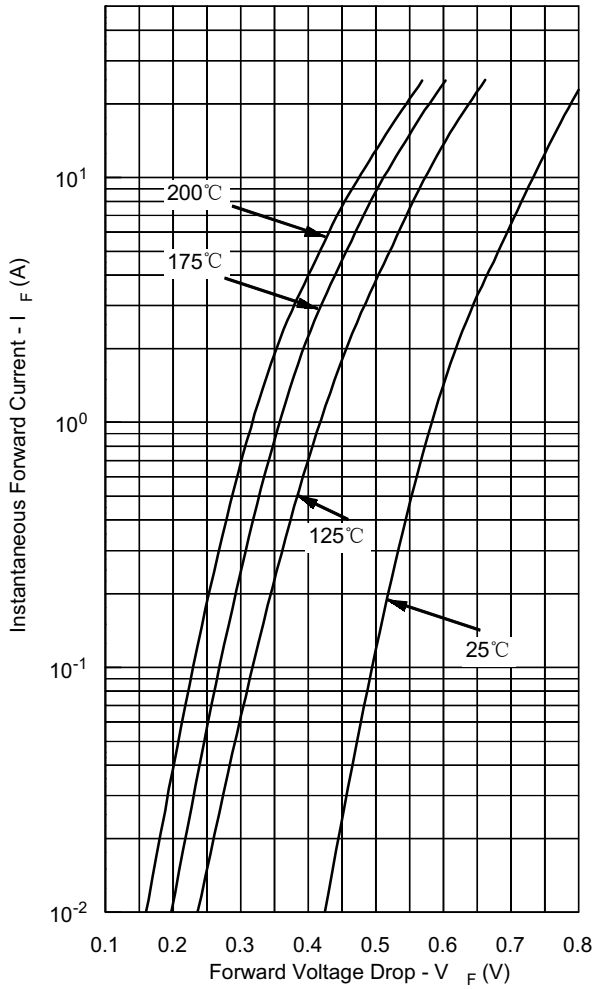
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg)*	V_{F1}	@ 8A, Pulse, T_J = 25 °C @16 A, Pulse, T_J = 25 °C	0.72 0.88	V
	V_{F2}	@ 8A, Pulse, T_J = 125 °C @ 16 A, Pulse, T_J = 125 °C	0.58 0.69	V
Max. Reverse Current (per leg)*	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.55	mA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	7.0	mA
Max. Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	500	pF
Typical Series Inductance (per leg)	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 < 300µs, Duty Cycle <2%

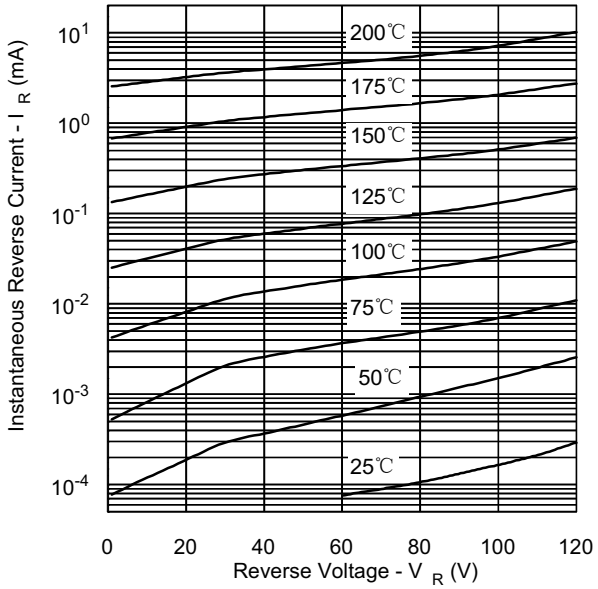
Thermal-Mechanical Specifications:

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 (per leg)	$R_{\theta JC}$	DC operation	3.25	°C/W
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	1.63	°C/W
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2.0	g
Mounting Torque	T_M	-	6 (min) 12 (max)	Kg-cm
Case Style	TO-220 D^2PAK TO-262 (Suffix "-1"for TO-262;Suffix "S"for D^2PAK)			

Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance