

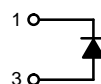
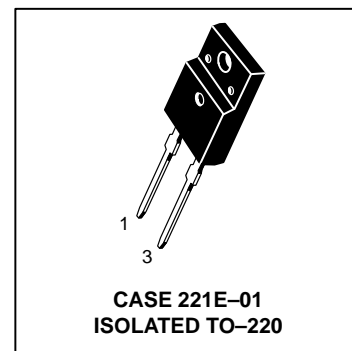
Advance Information
SWITCHMODE™
Power Rectifier

Designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- Ultrafast 35 ns Recovery Times
- 150°C Operating Junction Temperature
- Epoxy Meets UL94, V_O @ 1/8"
- High Temperature Glass Passivated Junction
- Low Leakage Specified @ 150°C Case Temperature
- Current Derating @ Both Case and Ambient Temperatures
- Electrically Isolated. No Isolation Hardware Required.
- UL Recognized File #E69369(1)

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U820



MAXIMUM RATINGS

Rating	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	200	Volts	
Average Rectified Forward Current (Rated V _R), T _C = 150°C	I _{F(AV)}	8	Amps	
Peak Repetitive Forward Current (Rated V _R , Square Wave, 20 kHz), T _C = 150°C	I _{FM}	16	Amps	
Non-repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I _{FSM}	100	Amps	
Operating Junction and Storage Temperature	T _J , T _{stg}	- 65 to +150	°C	
RMS Isolation Voltage (t = 1 second, R.H. ≤ 30%, T _A = 25°C) (2)	Per Figure 3 Per Figure 4 (1) Per Figure 5	V _{iso1} V _{iso2} V _{iso3}	4500 3500 1500	Volts

THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction to Case	R _{θJC}	4.2	°C/W
Lead Temperature for Soldering Purposes: 1/8" from Case for 5 seconds	T _L	260	°C

- (1) UL Recognized mounting method is per Figure 4.
(2) Proper strike and creepage distance must be provided.

SWITCHMODE is a trademark of Motorola, Inc.

This document contains information on a new product. Specifications and information herein are subject to change without notice.

Preferred devices are Motorola recommended choices for future use and best overall value.

MURF820

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (3) ($i_F = 8.0$ Amp, $T_C = 150^\circ\text{C}$) ($i_F = 8.0$ Amp, $T_C = 25^\circ\text{C}$)	v_F	0.895 0.975	Volts
Maximum Instantaneous Reverse Current (3) (Rated dc Voltage, $T_C = 150^\circ\text{C}$) (Rated dc Voltage, $T_C = 25^\circ\text{C}$)	i_R	250 5.0	μA
Maximum Reverse Recovery Time ($I_F = 1.0$ Amp, $di/dt = 50$ Amp/ μs) ($I_F = 0.5$ Amp, $i_R = 1.0$ Amp, $I_{REC} = 0.25$ Amp)	t_{rr}	35 25	ns

(3) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

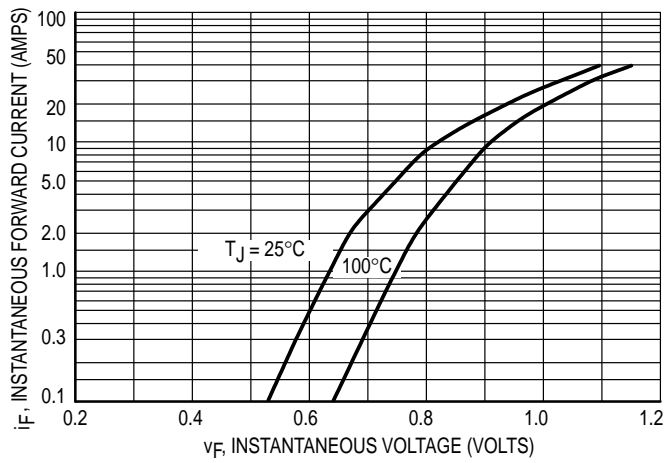


Figure 1. Typical Forward Voltage

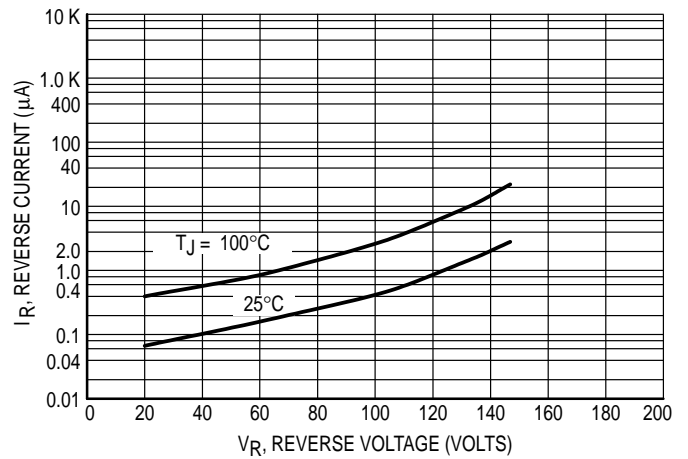
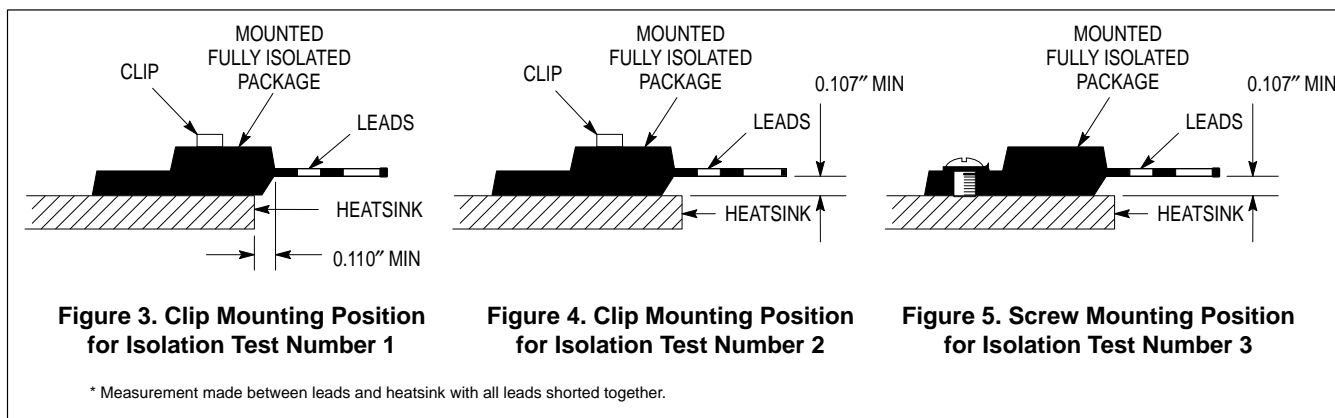
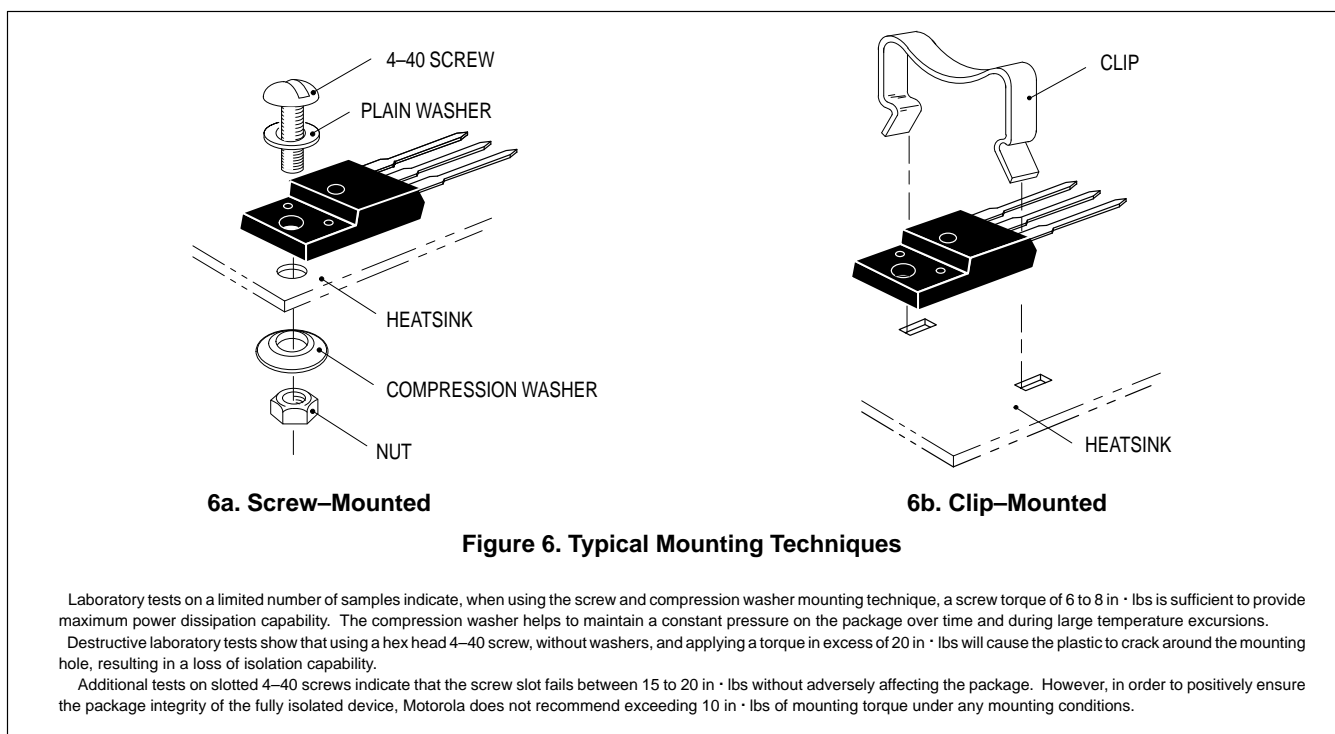


Figure 2. Typical Reverse Leakage Current*

TEST CONDITIONS FOR ISOLATION TESTS*

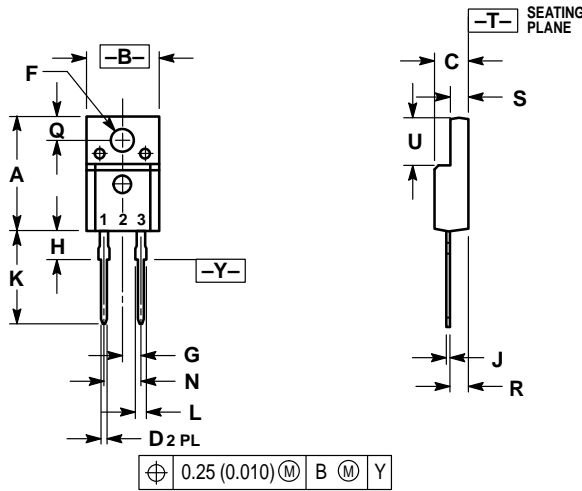


MOUNTING INFORMATION**



**For more information about mounting power semiconductors see Application Note AN1040.

PACKAGE DIMENSIONS




- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.621	0.629	15.78	15.97
B	0.394	0.402	10.01	10.21
C	0.181	0.189	4.60	4.80
D	0.026	0.034	0.67	0.86
F	0.121	0.129	3.08	3.27
G	0.100 BSC		2.54 BSC	
H	0.123	0.129	3.13	3.27
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
N	0.200 BSC		5.08 BSC	
Q	0.126	0.134	3.21	3.40
R	0.107	0.111	2.72	2.81
S	0.096	0.104	2.44	2.64
U	0.259	0.267	6.58	6.78

STYLE 1:
 PIN 1. CATHODE
 2. N/A
 3. ANODE

CASE 221E-01
 ISSUE O

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