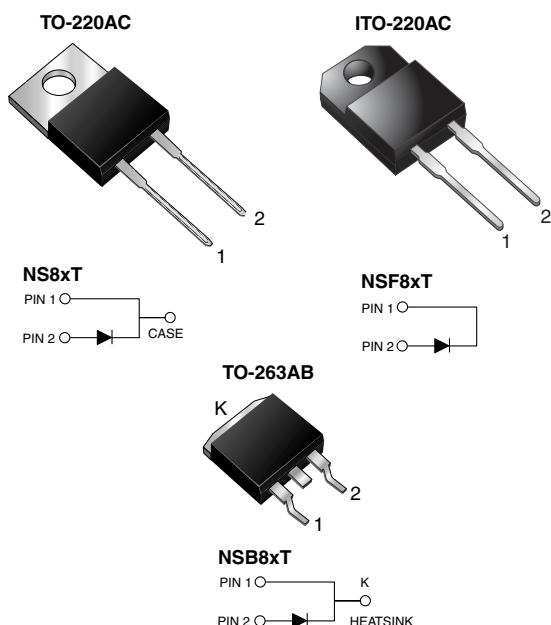


Glass Passivated General Purpose Plastic Rectifier



FEATURES

- Glass passivated chip junction
- Low forward voltage drop
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AC and ITO-220AC package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

MECHANICAL DATA

Case: TO-220AC, ITO-220AC, TO-263AB

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	8.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	125 A
V_F	1.1 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	NS8AT	NS8BT	NS8DT	NS8GT	NS8JT	NS8KT	NS8MT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_C = 100 \text{ °C}$	$I_{F(AV)}$	8.0							A
Peak forward surge current 8.3 ms single sine-wave superimposed on rated load	I_{FSM}	125							A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150							°C
Isolation voltage (ITO-220AC only) from terminal to heatsink $t = 1 \text{ min}$	V_{AC}	1500							V

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	NS8AT	NS8BT	NS8DT	NS8GT	NS8JT	NS8KT	NS8MT	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	8.0 A	T _J = 25 °C	V _F	1.1							V
Maximum DC reverse current at rated DC blocking voltage		T _J = 25 °C T _J = 100 °C	I _R	10 100							μA
Typical junction capacitance	4.0 V, 1 MHz		C _J	55							pF

Note:(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	NSxT	NSFxT	NSBxT	UNIT
Typical thermal resistance from junction to case	$R_{\theta JC}$	3.0	5.0	3.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	NS8JT-E3/45	1.80	45	50/tube	Tube
ITO-220AC	NSF8JT-E3/45	1.95	45	50/tube	Tube
TO-263AB	NSB8JT-E3/45	1.77	45	50/tube	Tube
TO-263AB	NSB8JT-E3/81	1.77	81	800/reel	Tape reel
TO-220AC	NS8JT-E3/45 ⁽¹⁾	1.80	45	50/tube	Tube
ITO-220AC	NSF8JT-E3/45 ⁽¹⁾	1.95	45	50/tube	Tube
TO-263AB	NSB8JT-E3/45 ⁽¹⁾	1.77	45	50/tube	Tube
TO-263AB	NSB8JT-E3/81 ⁽¹⁾	1.77	81	800/reel	Tape reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

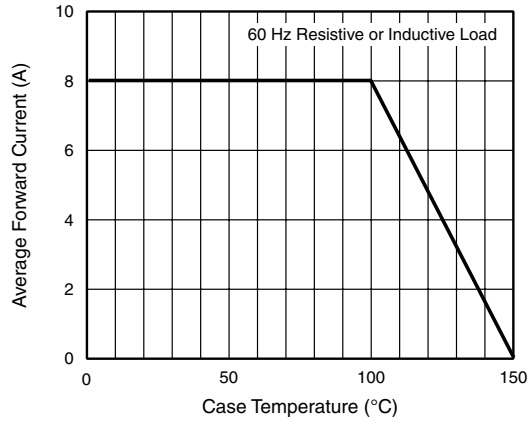


Figure 1. Forward Current Derating Curve

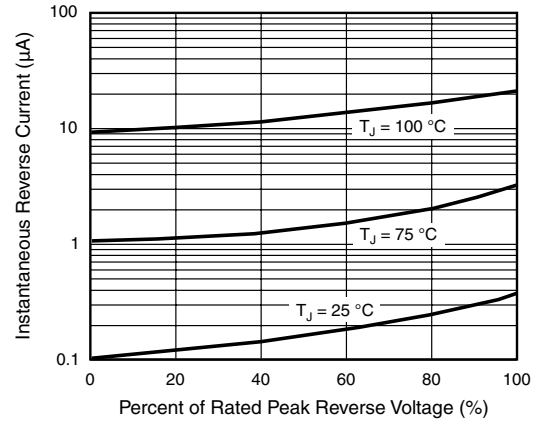


Figure 4. Typical Reverse Characteristics

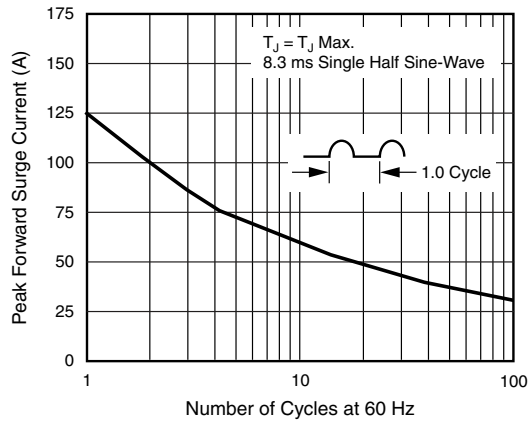


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

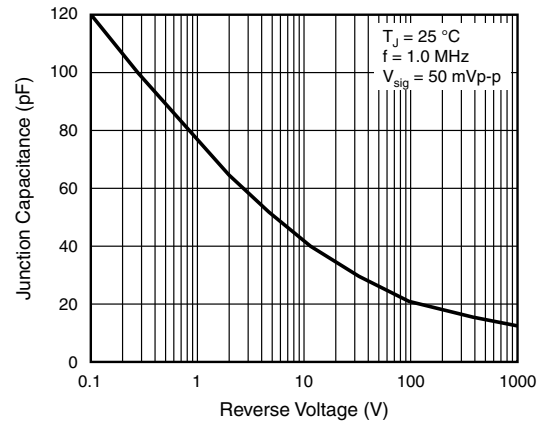


Figure 5. Typical Junction Capacitance Per Leg

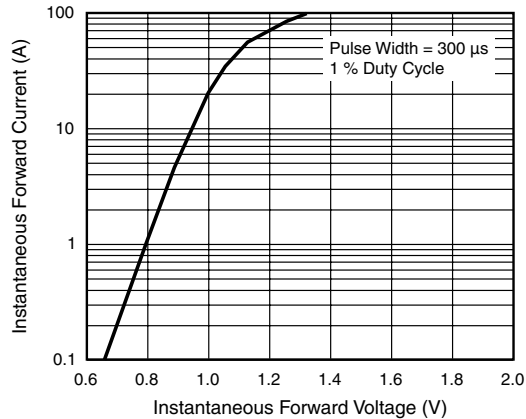
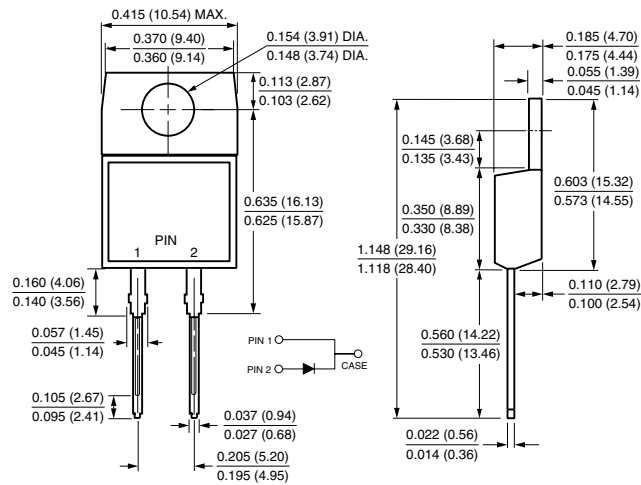


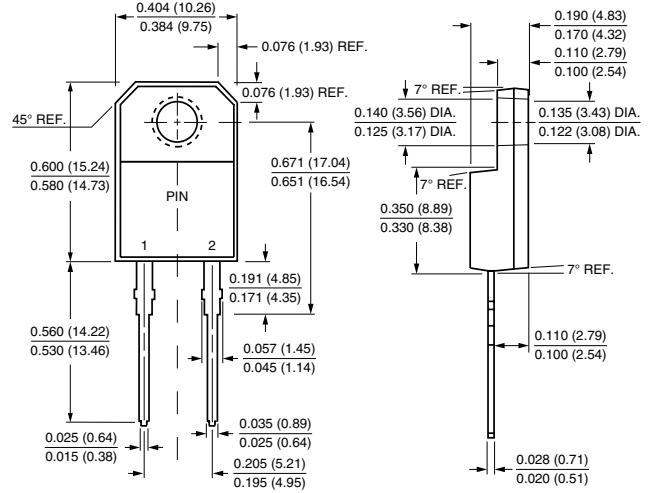
Figure 3. Typical Instantaneous Forward Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

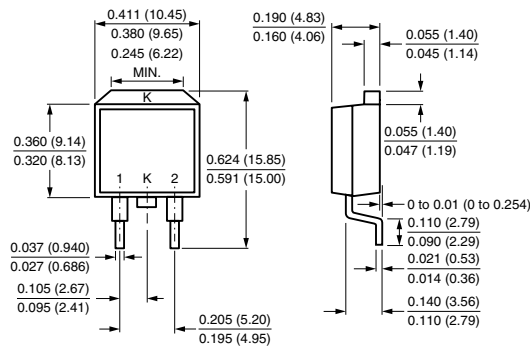
TO-220AC



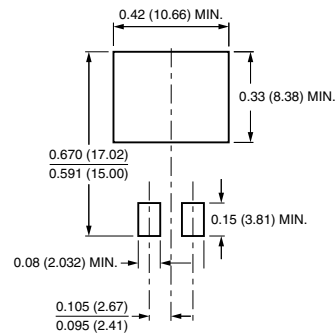
ITO-220AC



TO-263AB



Mounting Pad Layout





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