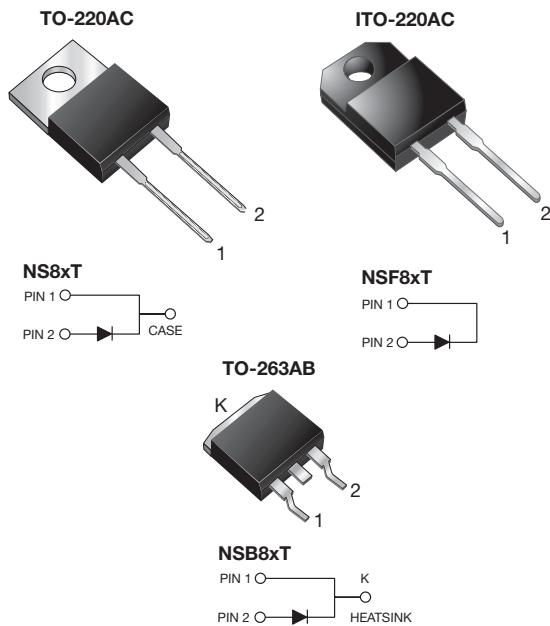


## Glass Passivated General Purpose Plastic Rectifier



### FEATURES

- Power pack
- 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 275 °C max. 10 s, per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**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

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix 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
$T_J$ max.	150 °C
Package	TO-220AC, ITO-220AC, TO-263AB
Diode variation	Single

MAXIMUM RATINGS ( $T_A = 25$ °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 $T_C = 100$ °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 $t = 1$ min	$V_{AC}$	1500							V

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	NS8AT	NS8BT	NS8DT	NS8GT	NS8JT	NS8KT	NS8MT	UNIT
Maximum instantaneous forward voltage	8.0 A	$T_J = 25^\circ\text{C}$	$V_F$ <sup>(1)</sup>	1.1					V		
Maximum DC reverse current at rated DC blocking voltage		$T_J = 25^\circ\text{C}$	$I_R$	10					$\mu\text{A}$		
		$T_J = 100^\circ\text{C}$		100							
Typical junction capacitance	4.0 V, 1 MHz		$C_J$	55					$\text{pF}$		

**Note**

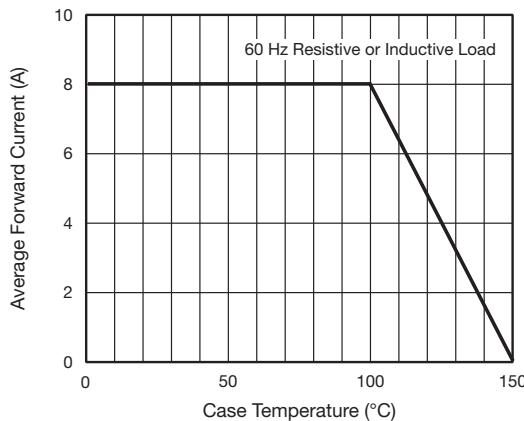
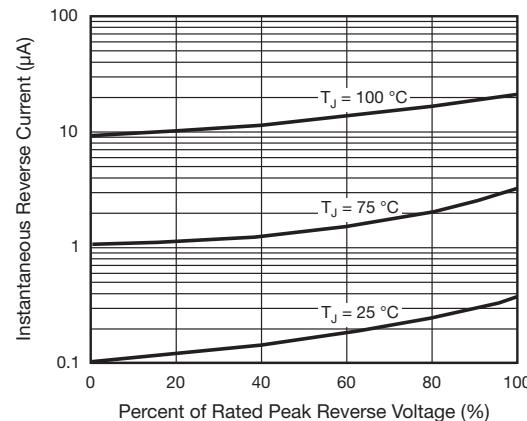
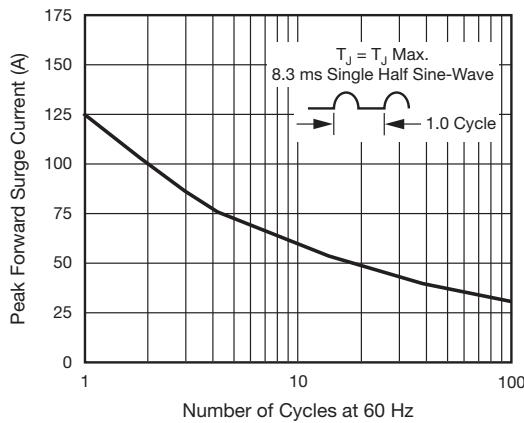
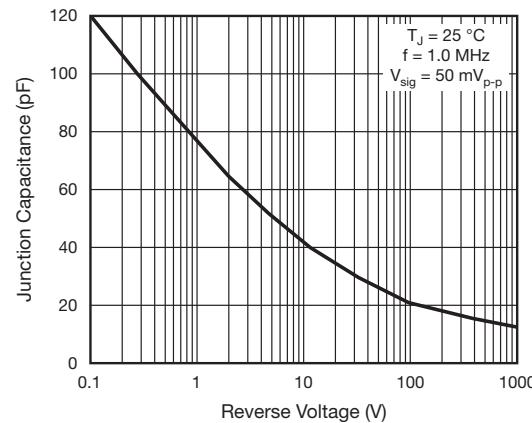
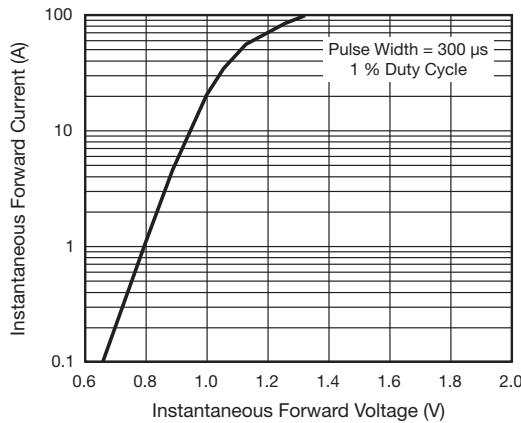
<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ 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	$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b> (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 and reel
TO-220AC	NS8JTHER3/45 <sup>(1)</sup>	1.80	45	50/tube	Tube
ITO-220AC	NSF8JTHER3/45 <sup>(1)</sup>	1.95	45	50/tube	Tube
TO-263AB	NSB8JTHER3/45 <sup>(1)</sup>	1.77	45	50/tube	Tube
TO-263AB	NSB8JTHER3/81 <sup>(1)</sup>	1.77	81	800/reel	Tape and reel

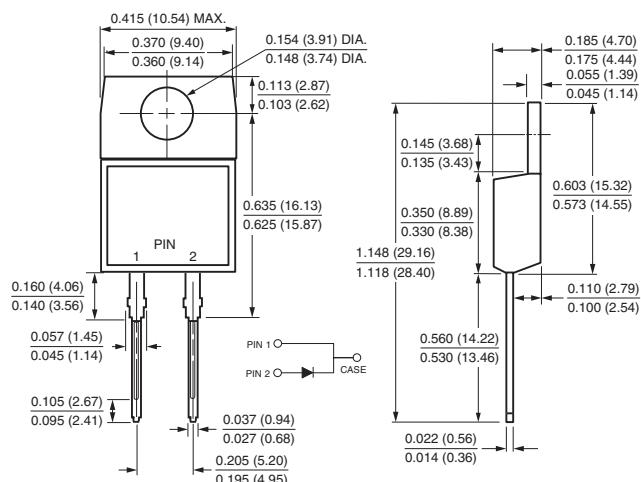
**Note**

<sup>(1)</sup> AEC-Q101 qualified

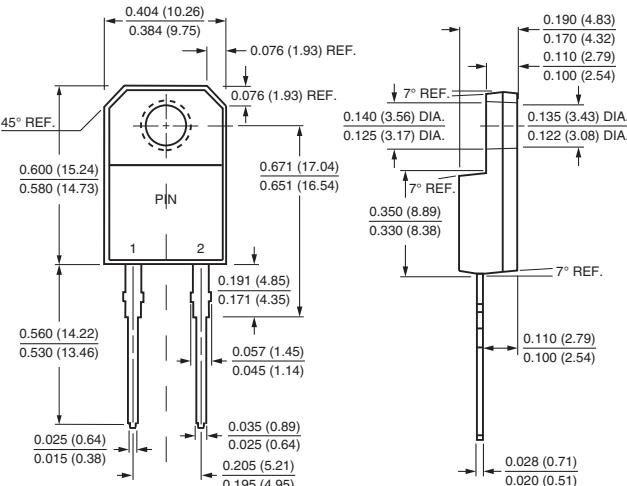
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig. 1 - Forward Current Derating Curve**

**Fig. 4 - Typical Reverse Characteristics**

**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**

**Fig. 5 - Typical Junction Capacitance Per Leg**

**Fig. 3 - Typical Instantaneous Forward Characteristics**

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

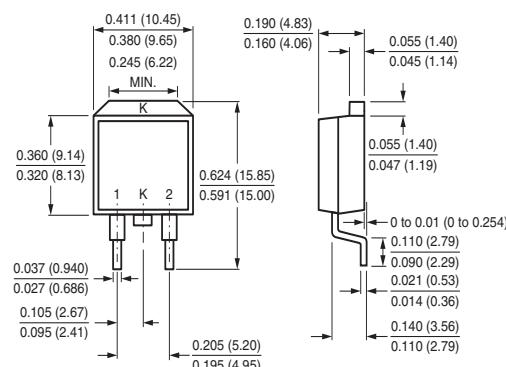
TO-220AC



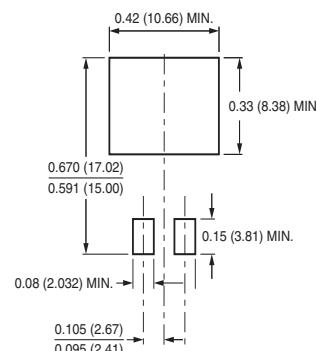
ITO-220AC



TO-263AB



## Mounting Pad Layout



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