

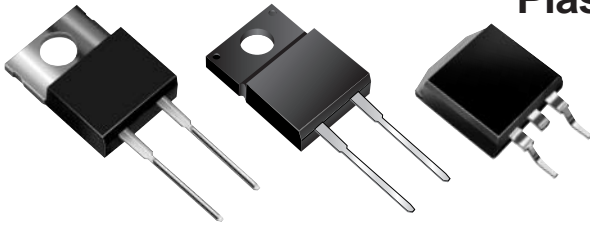


# NSxT, NSFxT, NSBxT

Vishay Semiconductors  
formerly General Semiconductor

## Glass Passivated General Purpose Plastic Rectifier

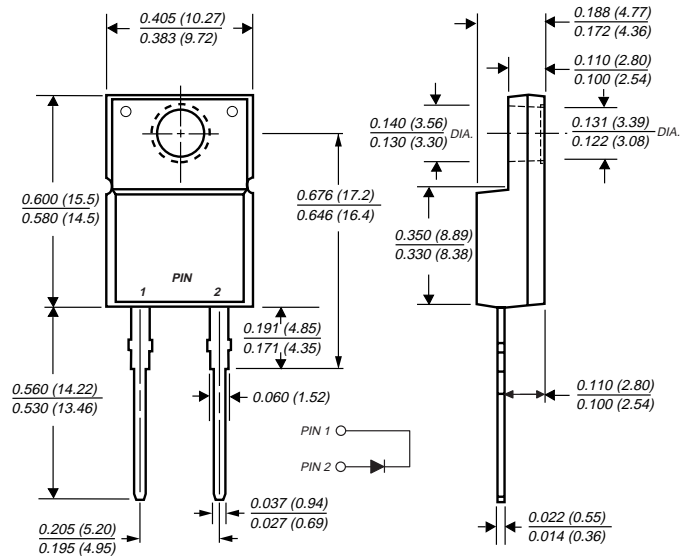
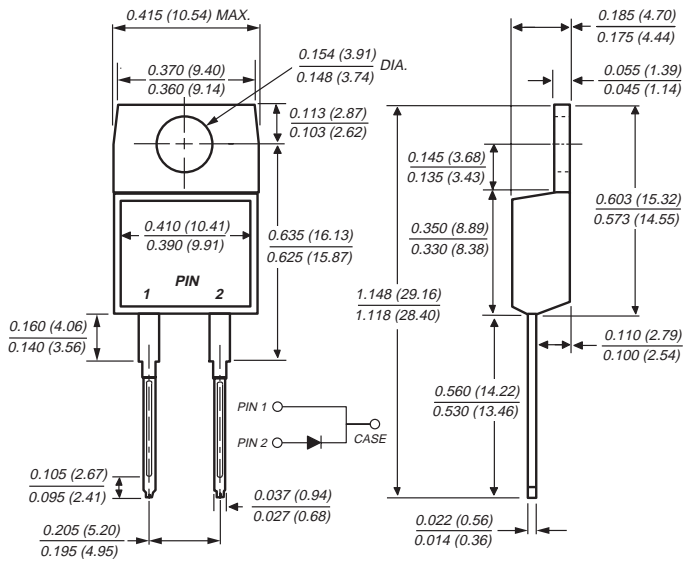
Reverse Voltage 50 to 1000  
Forward Current 8.0A



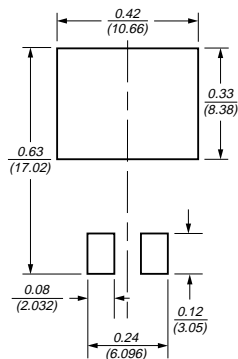
TO-220AC (NSxT)

ITO-220AC (NSFxT)

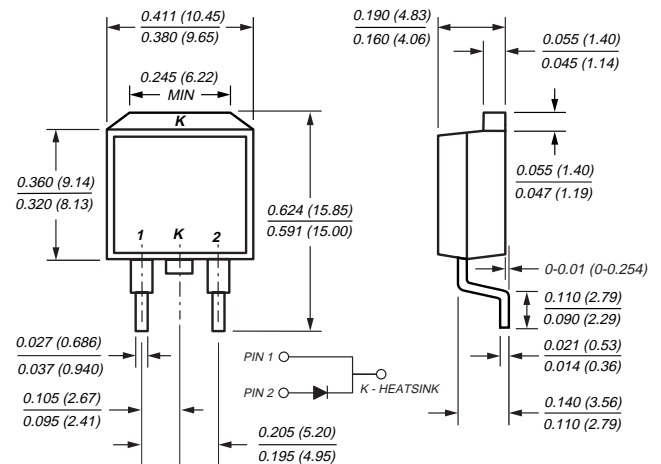
TO-263AB (NSBxT)



Mounting Pad Layout TO-263AB



Dimensions in inches  
and (millimeters)



### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High forward current capability
- High surge current capability
- Low forward voltage drop
- Glass passivated chip junction
- High temperature soldering guaranteed: 260°C/10 seconds, 0.160" (4.06mm) lead length

### Mechanical Data

- Case:** JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body
- Terminals:** Plated leads solderable per MIL-STD-750, Method 2026
- Polarity:** As marked
- Mounting Torque:** 10 in.-lbs. max.
- Mounting Position:** Any
- Weight:** 0.064 ounce, 1.81 grams

## Maximum Ratings & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	NS8 AT	NS8 BT	NS8 DT	NS8 GT	NS8 JT	NS8 KT	NS8 MT	Units
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 $T_C=100^\circ\text{C}$	$I_{F(AV)}$	8.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	125							A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							$^\circ\text{C}$
RMS Isolation voltage (NSF type only) from terminals to heatsink with $t = 1.0$ second, $RH \leq 30\%$	$V_{ISOL}$	4500 <sup>(1)</sup> 3500 <sup>(2)</sup> 1500 <sup>(3)</sup>							V

## Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	NS8 AT	NS8 BT	NS8 DT	NS8 GT	NS8 JT	NS8 KT	NS8 MT	Units
Maximum instantaneous forward voltage at 8.0A	$V_F$	1.1							V
Maximum DC reverse current at rated DC blocking voltage $T_C=25^\circ\text{C}$ $T_C=100^\circ\text{C}$	$I_R$	10 100							$\mu\text{A}$
Typical junction capacitance at 4.0V, 1MHz	$C_J$	55							pF

## Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

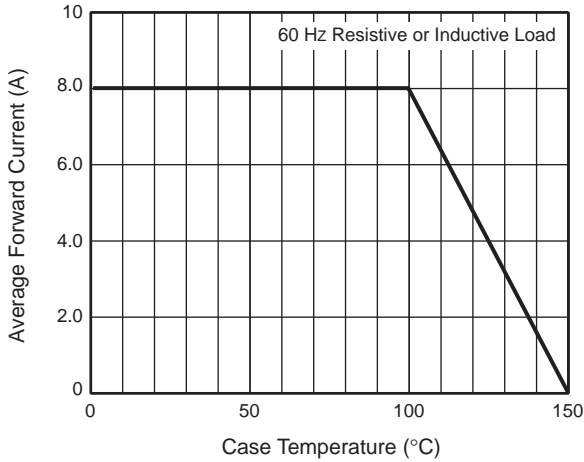
Parameter	Symbols	NSxT	NSFxt	NSBxt	Units
Typical thermal resistance <sup>(4)</sup>	$R_{\theta JC}$	3.0	5.0	3.0	$^\circ\text{C/W}$

**Notes:**

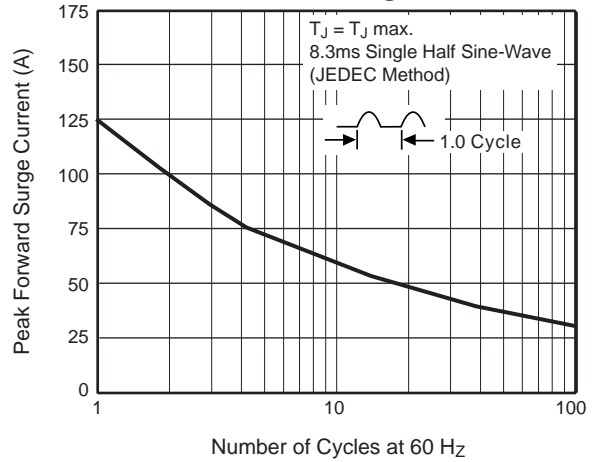
- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is  $\leq 4.9\text{mm}$  (0.19")
- (4) Thermal resistance from junction to case mounted on heat sink

**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

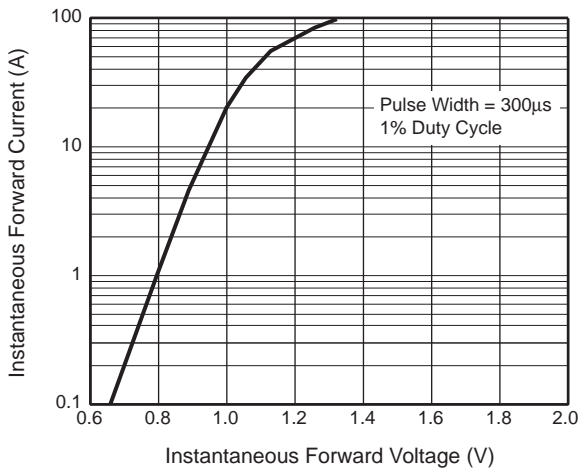
**Fig. 1 – Forward Current Derating Curve**



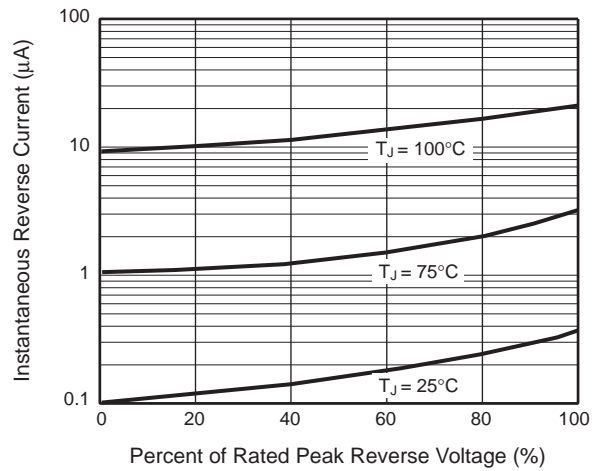
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



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



**Fig. 4 – Typical Reverse Characteristics**



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

