



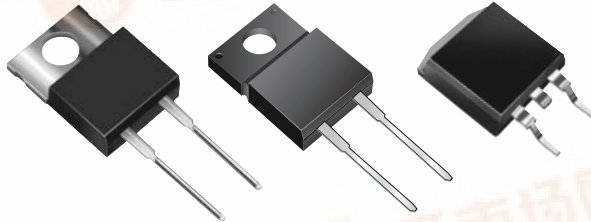
BYS459-1500S, BYS459F-1500S, BYS459B-1500S

New Product

Vishay Semiconductors
formerly General Semiconductor

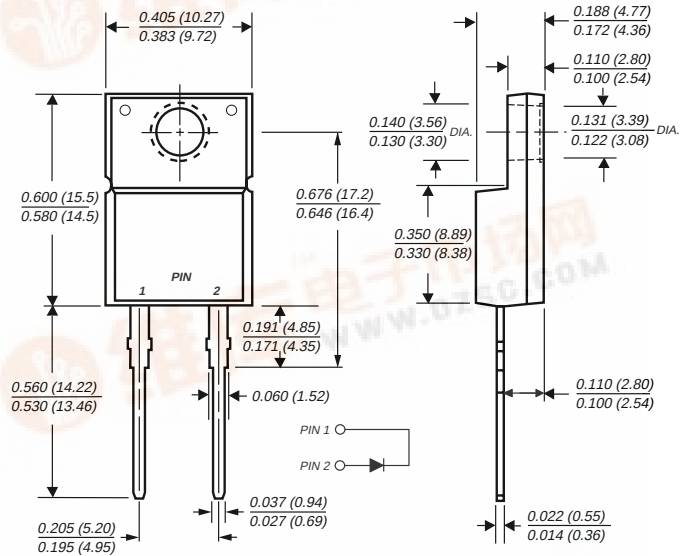
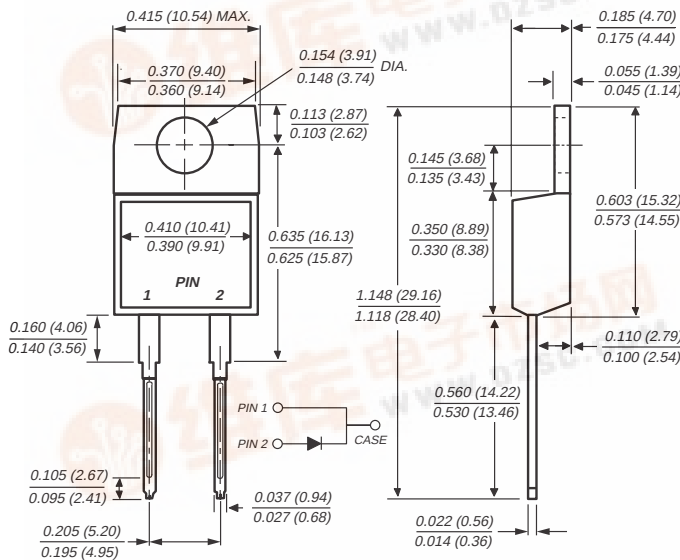
High Voltage Damper Diodes

Reverse Voltage 1500V
Forward Current 10A
Reverse Recovery Time 220ns



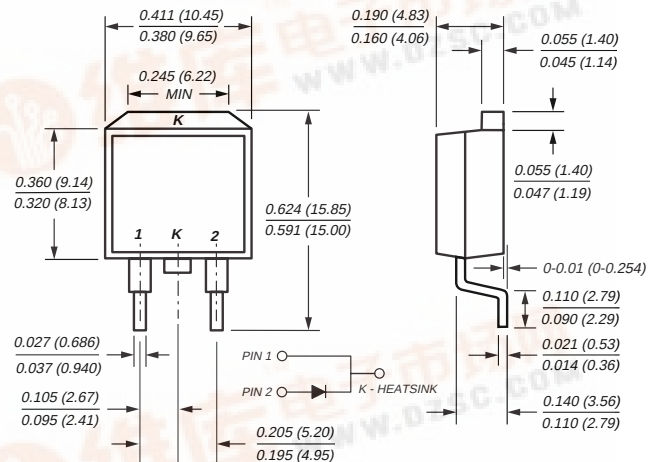
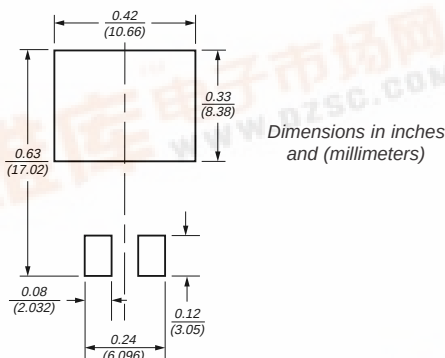
TO-220AC (BYS459)

ITO-220AC (BYS459F)



Mounting Pad Layout TO-263AB

TO-263AB (BYS459B)



Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited CRT horizontal deflection
- Fast reverse recovery time
- Fast forward recovery time
- Soft recovery characteristics
- Glass passivated chip junction

Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case for TO-220 & ITO-220; at terminals for TO-263

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs maximum

Weight: 0.08 oz., 2.24 g

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Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	1500	V
Maximum working reverse voltage	V _{RWM}	1300	V
Maximum DC blocking voltage	V _{DC}	1500	V
Maximum average forward rectified current (see fig. 1)	I _{F(AV)}	10	A
Peak working forward current at f = 82 kHz	I _{F(peak)}	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _J = 150°C	I _{FSM}	130	A
Operating junction and storage temperature range	T _J , T _{STG}	–55 to +150	°C
RMS Isolation voltage (BYS459F types only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V _{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾	V

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage ⁽⁴⁾ I _F = 6.5A, T _J = 25°C I _F = 6.5A, T _J = 125°C	V _F	1.35 1.25	V
Maximum DC reverse current at V _{RWM} T _J = 25°C T _J = 125°C	I _R	250 1.0	μA mA
Maximum reverse recovery time at I _F = 1.0A, di/dt = 50A/μs, V _R = 30V	t _{rr}	220	ns
Maximum reverse recovery charge at I _F = 2.0A, di/dt = 20A/μs, V _R = 30V	Q _{rr}	0.95	μC
Maximum forward recovery time I _F = 6.5A, di/dt = 52A/μs, V _{FR} = 5V	t _{fr}	300	ns
Peak forward recovery overshoot voltage I _F = 6.5A, di/dt = 52A/μs	V _{FP}	27	V

Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	BYS459	BYS459F	BYS459B	Unit
Typical thermal resistance from junction to case	R _{θJC}	2.0	4.0	2.0	°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 ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

Ordering Information

Product	Case	Package Code	Package Option
BYS459-1500S	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
BYS459F-1500S	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
BYS459B-1500S	TO-263AB	31 45 81	13" reel, 800/reel, 4.8K/carton Anti-Static tube, 50/tube, 2K/carton Anti-Static 13" reel, 800/reel, 4.8K/carton



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

Fig. 1 – Forward Current Derating Curve

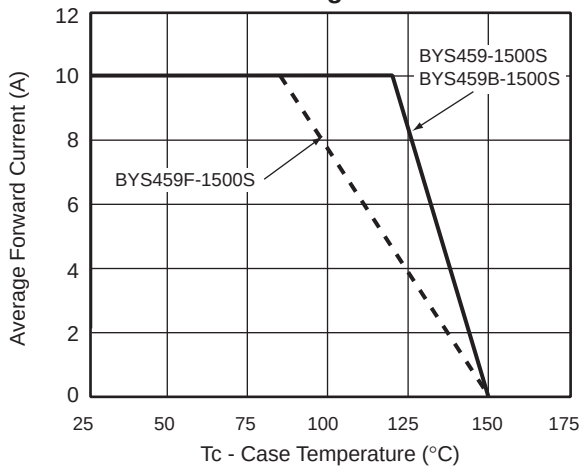


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

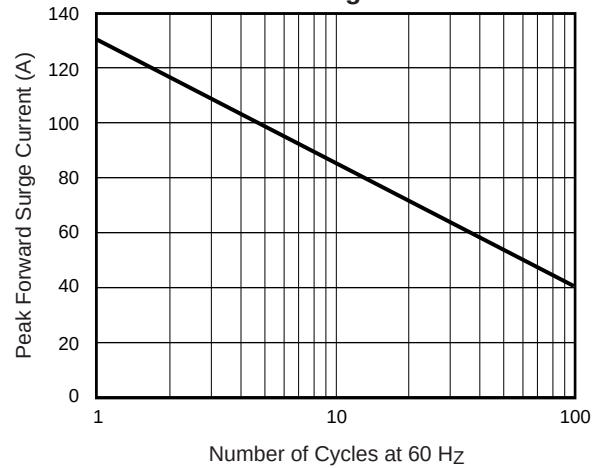


Fig. 3 – Typical Forward Voltage

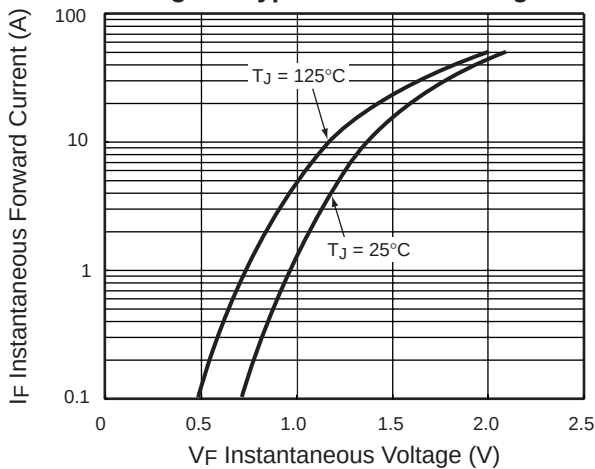


Fig. 4 – Typical Reverse Current

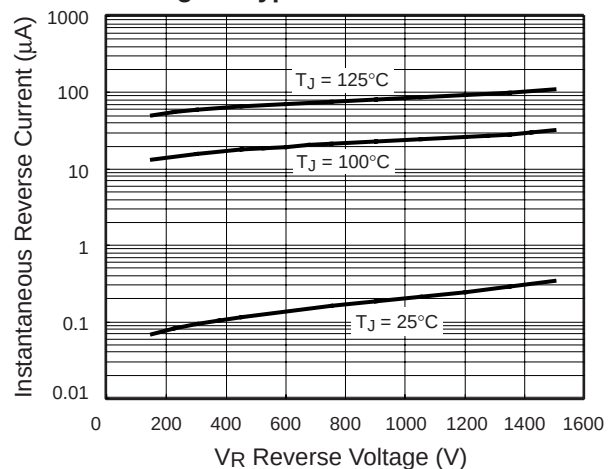


Fig. 5 – Typical Capacitance

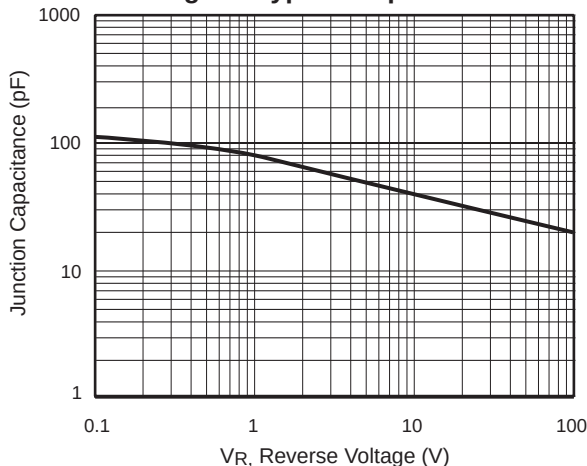


Fig. 6 – Typical Reverse Recovery Time

