



Ultrafast Rectifier

Technical drawing of a 2-pin connector. The drawing includes a top view and a side view. The top view shows a rectangular body with a circular feature in the center. The side view shows the profile of the connector, including the pins and the housing. Dimensions are provided in inches and millimeters.

Top View Dimensions:

- Overall width: 0.415 (10.54) MAX.
- Distance from left edge to center hole: 0.370 (9.40)
- Distance from center hole to right edge: 0.360 (9.14)
- Radius of center hole: 0.154 (3.91) DIA.
- Distance from top edge to center hole: 0.113 (2.87)
- Distance from bottom edge to center hole: 0.103 (2.62)
- Distance from left edge to pin 1: 0.410 (10.41)
- Distance from center hole to pin 2: 0.390 (9.91)
- Distance from pin 1 to pin 2: 0.635 (16.13)
- Distance from pin 2 to right edge: 0.625 (15.87)

Side View Dimensions:

- Overall height: 0.185 (4.70)
- Distance from top edge to center of pin 1: 0.175 (4.44)
- Distance from center of pin 1 to center of pin 2: 0.055 (1.39)
- Distance from center of pin 2 to bottom edge: 0.045 (1.14)
- Distance from top edge to center of pin 2: 0.145 (3.68)
- Distance from center of pin 2 to center of pin 1: 0.135 (3.43)
- Distance from center of pin 1 to center of pin 2: 0.350 (8.89)
- Distance from center of pin 2 to center of pin 1: 0.330 (8.38)
- Distance from center of pin 1 to center of pin 2: 0.603 (15.32)
- Distance from center of pin 2 to center of pin 1: 0.573 (14.55)
- Distance from center of pin 1 to center of pin 2: 0.110 (2.79)
- Distance from center of pin 2 to center of pin 1: 0.100 (2.54)
- Distance from center of pin 1 to center of pin 2: 0.560 (14.22)
- Distance from center of pin 2 to center of pin 1: 0.530 (13.46)
- Distance from center of pin 1 to center of pin 2: 0.022 (0.56)
- Distance from center of pin 2 to center of pin 1: 0.014 (0.36)

Pin Dimensions:

- Pin 1 diameter: 0.160 (4.06)
- Pin 2 diameter: 0.140 (3.56)
- Pin 1 length: 0.105 (2.67)
- Pin 2 length: 0.095 (2.41)
- Pin 1 diameter at base: 0.205 (5.20)
- Pin 2 diameter at base: 0.195 (4.95)

Electrical Diagram:

- PIN 1 is connected to CASE.
- PIN 2 is connected to CASE.

[illegible]

Technical drawing of the K-HEATSINK showing front and side views with dimensions in mm and inches.

Front View Dimensions:

- Top width: 0.411 (10.45) / 0.380 (9.65)
- Top width (inner): 0.245 (6.22)
- Top width (MIN): MIN
- Left height: 0.360 (9.14) / 0.320 (8.13)
- Right height: 0.624 (15.85) / 0.591 (15.00)
- Pin 1 and Pin 2 locations are marked.

Side View Dimensions:

- Top width: 0.190 (4.83) / 0.160 (4.06)
- Top width (inner): 0.055 (1.40) / 0.045 (1.14)
- Right height: 0.055 (1.40) / 0.047 (1.19)
- Bottom width: 0.027 (0.686) / 0.037 (0.940)
- Bottom width (inner): 0.105 (2.67) / 0.095 (2.41)
- Bottom width (inner): 0.205 (5.20) / 0.195 (4.95)
- Bottom width (inner): 0.110 (2.79) / 0.090 (2.29)
- Bottom width (inner): 0.021 (0.53) / 0.014 (0.36)
- Bottom width (inner): 0.140 (3.56) / 0.110 (2.79)

Pin Connections:

- PIN 1 is connected to the K-HEATSINK.
- PIN 2 is connected to the K-HEATSINK.

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BYV29, BYV29F, BYV29B, UG8GT, UGF8GT, UGB8GT Series

Vishay Semiconductors
formerly General Semiconductor



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

Parameter	Symbol	UG8FT	UG8GT	Unit
		BYV29-300	BYV29-400	
Maximum repetitive peak reverse voltage	V _{RRM}	300	400	V
Maximum working reverse voltage	V _{RWM}	300	400	V
Maximum RMS voltage	V _{RMS}	210	280	V
Maximum DC blocking voltage	V _{DC}	300	400	V
Maximum average forward rectified current at T _C = 100°C	I _{F(AV)}	8.0		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _C = 100°C	I _{FSM}	110		A
Operating junction and storage temperature range	T _J , T _{STG}	-40 to +150		°C
RMS Isolation voltage (UGF & BYV29F 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_C = 25°C unless otherwise noted)

Parameter	Symbol	UG8FT	UG8GT	Unit
		BYV29-300	BYV29-400	
Maximum instantaneous forward voltage ⁽⁴⁾ I _F = 8A, T _J = 25°C I _F = 8A, T _J = 150°C I _F = 20A, T _J = 25°C	V _F	1.25 1.03 1.40		V
Maximum DC reverse current at V _{RRM} T _C = 25°C T _C = 100°C	I _R	10 350		μA
Maximum reverse recovery time at I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A	t _{rr}	35		ns
Maximum reverse recovery time at I _F = 1.0A, di/dt = 100A/μs, V _R = 30V, I _{rr} = 0.1 I _{RM}	t _{rr}	50		ns
Maximum reverse recovery current at I _F = 10A, di/dt = 50A/μs, V _R = 30V, T _C = 100°C	I _{RM}	5.5		A
Maximum recovered stored charged at I _F = 2A, di/dt = 20A/μs, V _R = 30V, I _{rr} = 0.1 I _{RM}	Q _{rr}	55		nC

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

Parameter	Symbol	UG8	UGF8	UGB8	Unit
		BYV29	BYV29F	BYV29B	
Typical thermal resistance from junction to case	R _{θJC}	2.5	5.5	2.5	°C/W

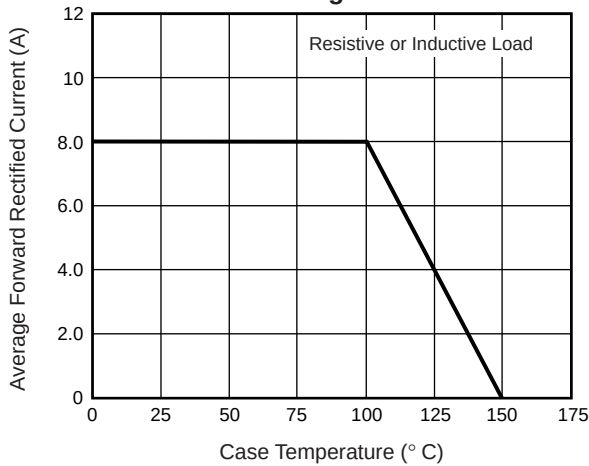
Notes:

- (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

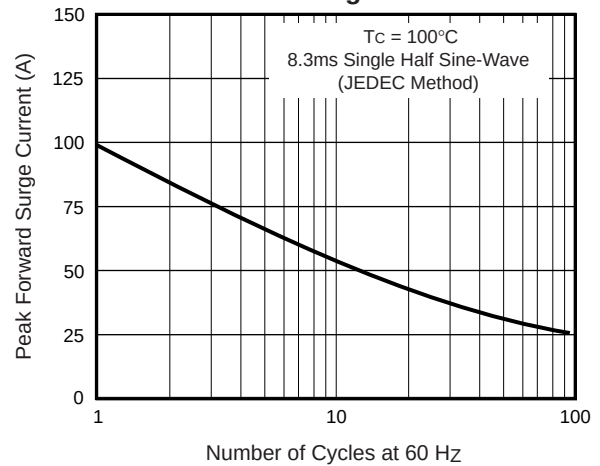


Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

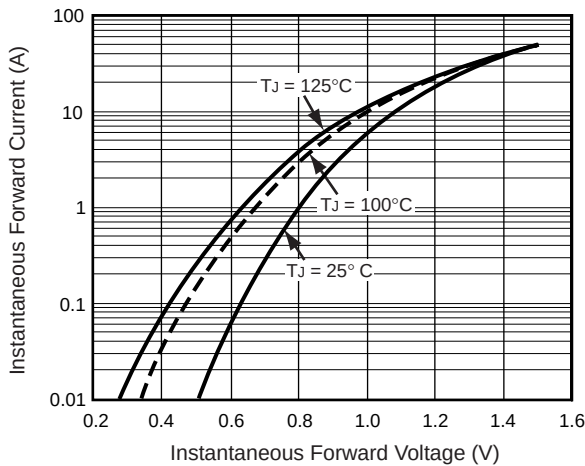
**Fig. 1 – Maximum Forward Current
Derating Curve**



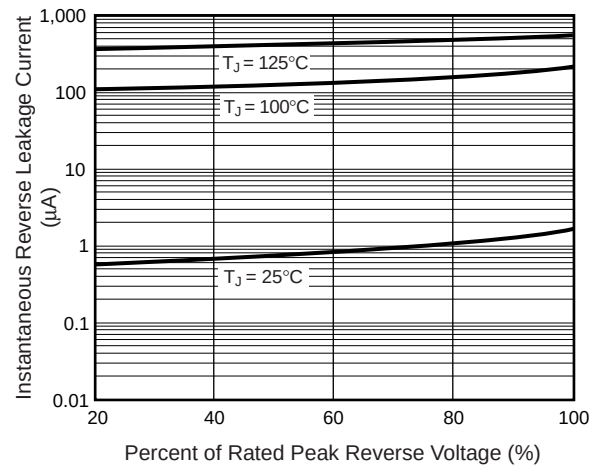
**Fig. 2 – Maximum Non-Repetitive Peak
Forward Surge Current**



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



**Fig. 4 – Typical Reverse Leakage
Characteristics**



**Fig 5 — Reverse Switching
Characteristics Per Leg**

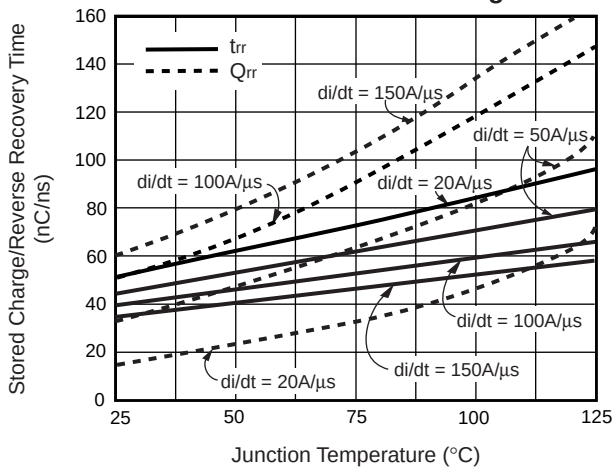


Fig. 6 – Typical Junction Capacitance

