Ordering number:EN2579B

SB50-18

Schottky Barrier Diode (Twin Type · Cathode Common)

180V, 5A Rectifier

Applications

· High frequency rectification (switching regulators, converters, choppers).

Features

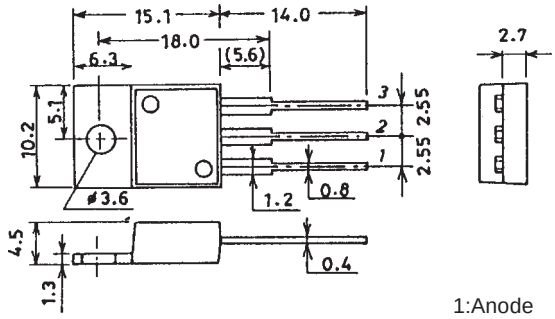
· Low forward voltage (V_F max=0.85V).
· Fast reverse recovery time (trr max=40ns).
· Low switching noise.
· Low leakage current and high reliability due to highly reliable planar structure.

Package Dimensions

unit:mm

1159B

[SB50-18]



JEDEC:TO-220AB
EIAJ:SC-46

1:Anode
2:Cathode
3:Anode

Specifications

Absolute Maximum Ratings at Ta = 25˚C

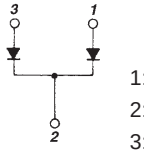
Parameter	Symbol	Conditions	Ratings	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		180	V
Nonrepetitive Peak Reverse Surge Voltage	V_{RSM}		190	V
Average Output Current	I_O	50Hz, resistive load, Tc=103˚C	5	A
Surge Forward Current	I_{FSM}	50Hz sine wave, 1 cycle	60	A
Junction Temperature	Tj		–55 to +125	˚C
Storage Temperature	Tstg		–55 to +125	˚C

Electrical Characteristics

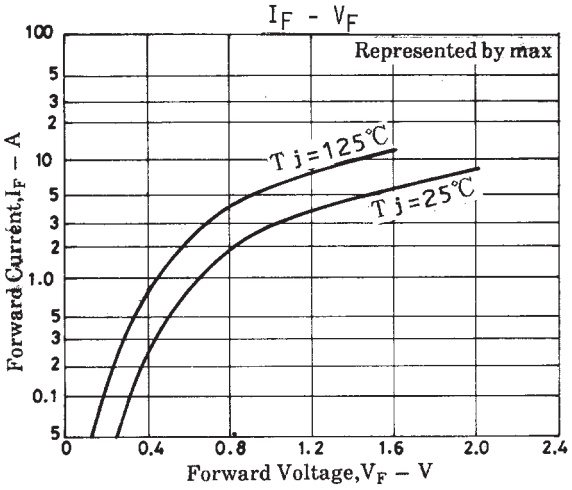
Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
Reverse Voltage	V_R	I_R=2mA, Tj=25˚C, *	180			V
Forward Voltage	V_F	I_F=2A, Tj=25˚C, *			0.85	V
Reverse Current	I_R	V_R=90V, Tj=25˚C, *			0.4	mA
Reverse Recovery Time	trr	I_F=2A, Tj=25˚C, *, –dI_F/dt=10A/μs			40	ns
Thermal Resistance	Rthj-c	Junction-Case:Smoothed DC			2.5	˚C/W

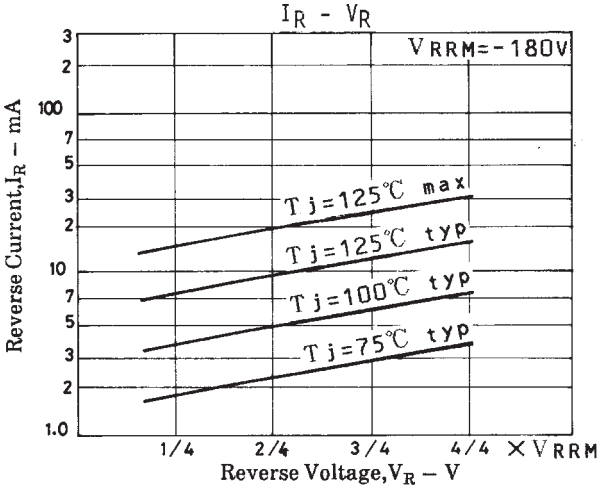
Note*:Value per element

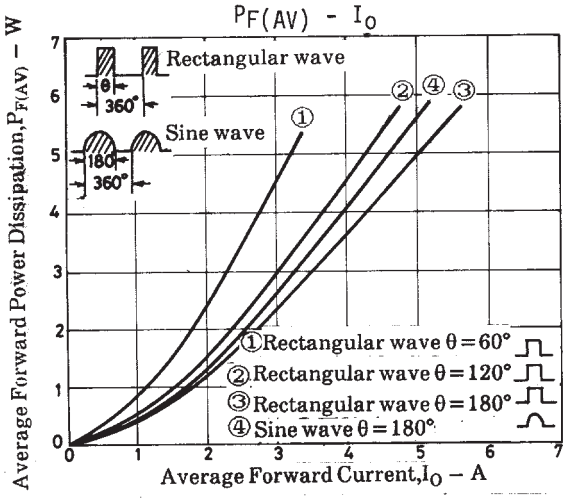
Electrical Connection

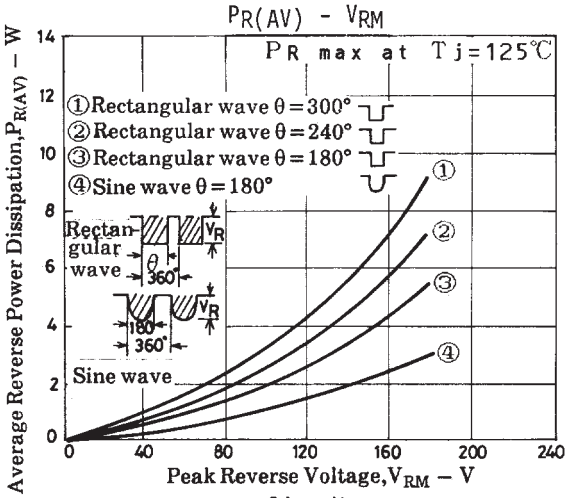


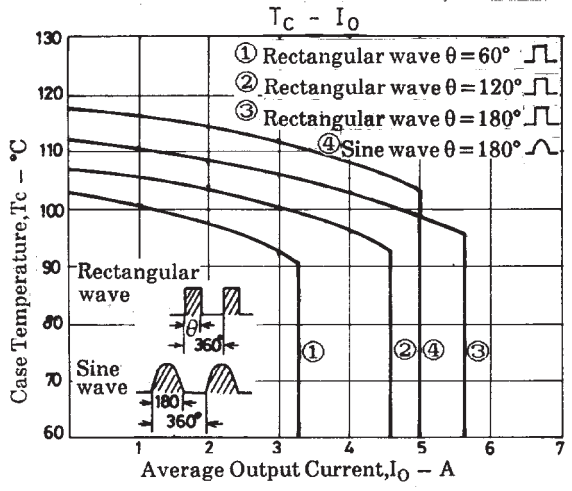
1:Anode
2:Cathode
3:Anode

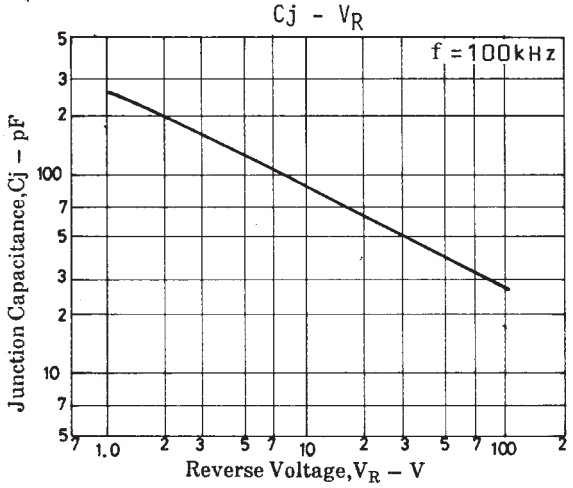

IF - VF
Represented by max
Tj=125℃
Tj=25℃
Forward Current,IF – A
Forward Voltage,VF – V

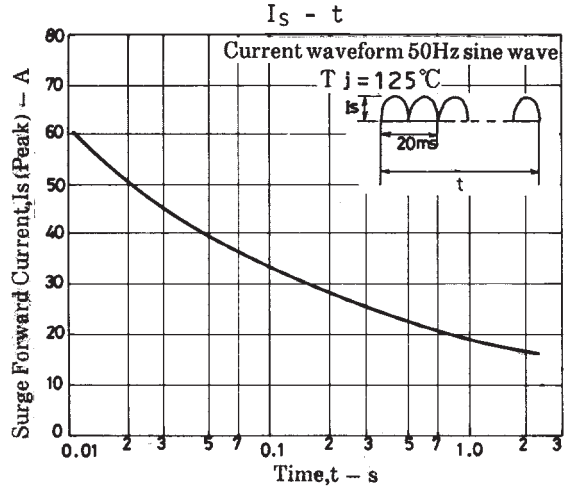

IR - VR
VRRM=-180V
Tj=125℃ max
Tj=125℃ typ
Tj=100℃ typ
Tj=75℃ typ
Reverse Current,IR – mA
Reverse Voltage,VR – V
×VRRM

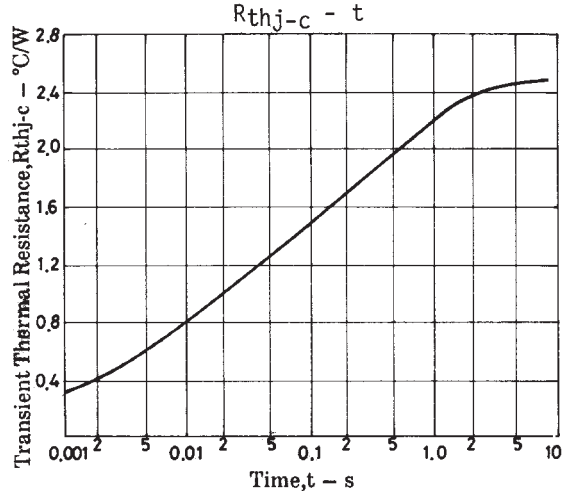

PF(AV) - IO
Rectangular wave
Sine wave
①Rectangular wave θ=60°
②Rectangular wave θ=120°
③Rectangular wave θ=180°
④Sine wave θ=180°
Average Forward Power Dissipation,PF(AV) – W
Average Forward Current,IO – A


PR(AV) - VRM
PR max at Tj=125℃
①Rectangular wave θ=300°
②Rectangular wave θ=240°
③Rectangular wave θ=180°
④Sine wave θ=180°
Rectangular wave
Sine wave
Average Reverse Power Dissipation,PR(AV) – W
Peak Reverse Voltage,VRM – V


TC - IO
①Rectangular wave θ=60°
②Rectangular wave θ=120°
③Rectangular wave θ=180°
④Sine wave θ=180°
Rectangular wave
Sine wave
Case Temperature,TC – ℃
Average Output Current,IO – A


Cj - VR
f=100kHz
Junction Capacitance,Cj – pF
Reverse Voltage,VR – V


IS - t
Current waveform 50Hz sine wave
Tj=125℃
20ms
Surge Forward Current,Is (Peak) – A
Time,t – s


Rthj-c - t
Transient Thermal Resistance,Rthj-c – ℃/W
Time,t – s