

SB1620FCT THRU SB16200FCT

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SB1620FCT THRU SB16200FCT

16.0A Power Schottky Barrier Rectifiers - 20V-200V

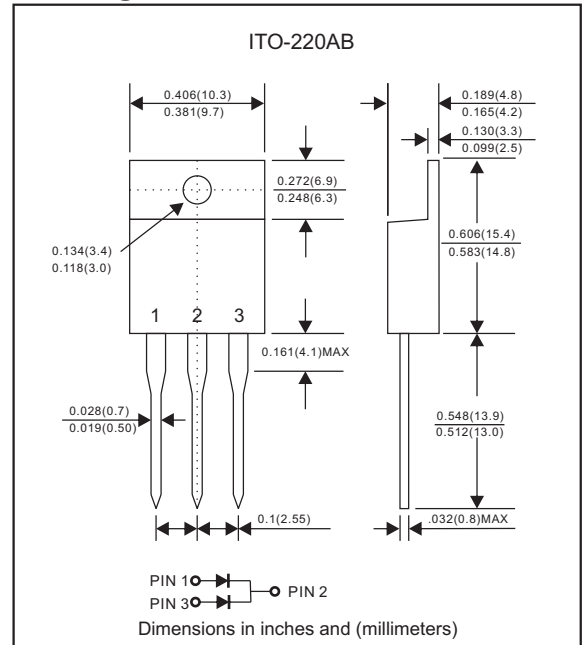
Features

- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Offer 8A half wave and 16A full wave rectification.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts, ex. SB1620FCT-H

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC ITO-220AB molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- Mounting Position : Any
- Weight : Approximated 1.70 gram

Package outline



Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	SB 1620FCT	SB 1640FCT	SB 1645FCT	SB 1650FCT	SB 1660FCT	SB 1680FCT	SB 16100FCT	SB 16150FCT	SB 16200FCT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	20	40	45	50	60	80	100	150	200	V
Maximum RMS voltage	V_{RMS}	14	28	31.5	35	42	56	70	105	140	V
Maximum DC blocking voltage	V_{DC}	20	40	45	50	60	80	100	150	200	V
Maximum average forward rectified current	I_o	16									A
Peak forward surge current 8.3ms single half sine-wave(JEDEC method)	I_{FSM}	150									A
Operating junction temperature range	T_J	-55 to +125			-55 to +150						$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 to +175									$^\circ\text{C}$

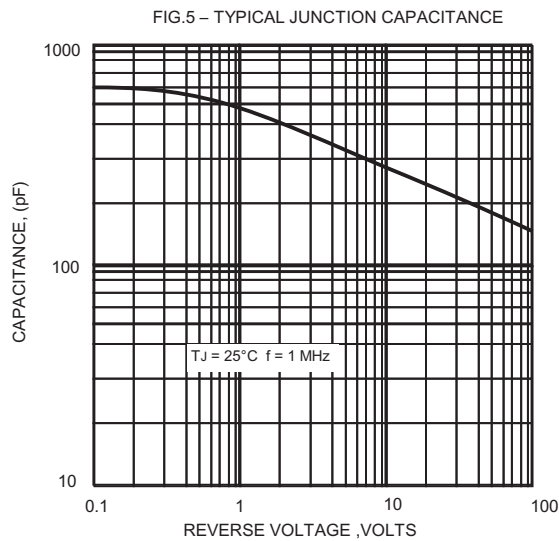
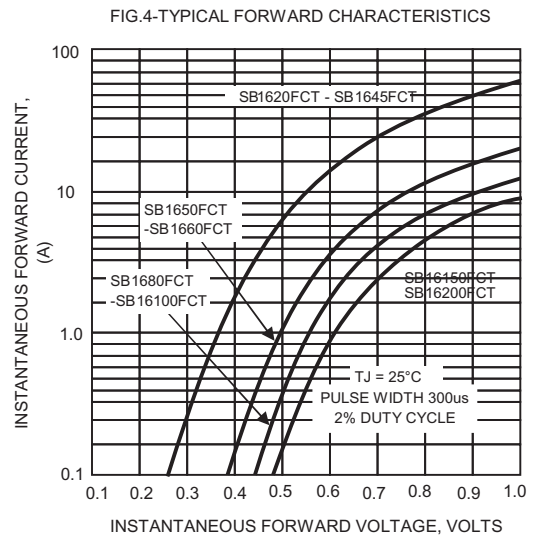
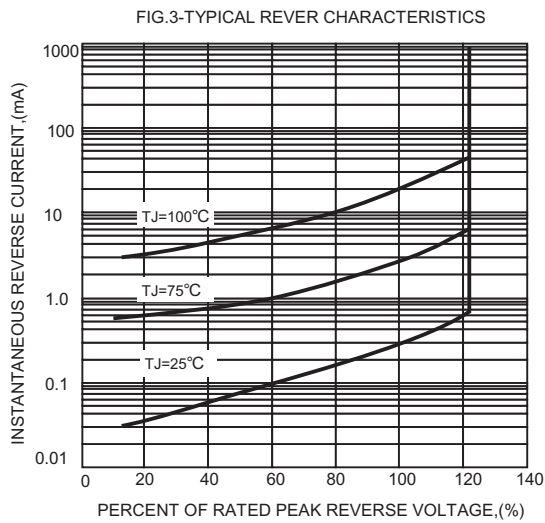
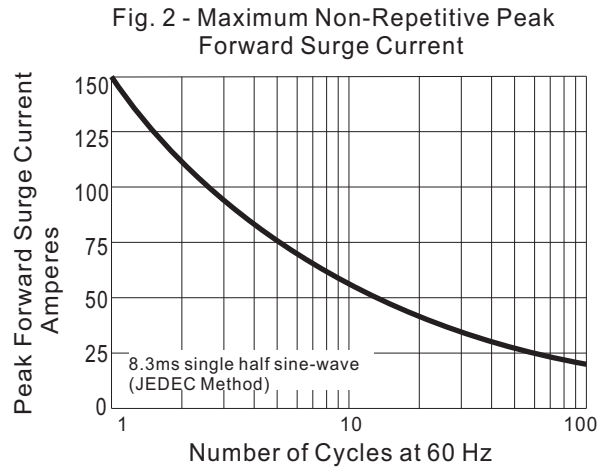
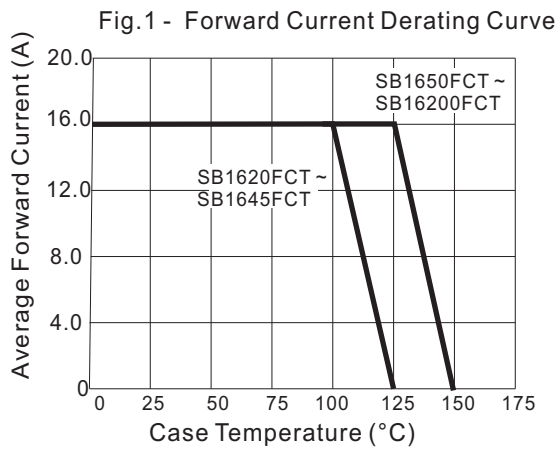
Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	SB 1620FCT	SB 1640FCT	SB 1645FCT	SB 1650FCT	SB 1660FCT	SB 1680FCT	SB 16100FCT	SB 16150FCT	SB 16200FCT	UNIT	
Maximum forward voltage per leg at $I_f=8\text{A}$	V_F	0.55			0.75		0.85		0.90	0.92	V	
Maximum DC reverse current at $T_J=25^\circ\text{C}$ at rated DC blocking voltage at $T_J=100^\circ\text{C}$ per leg	I_R	0.5					50					mA mA

Thermal Characteristics

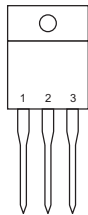
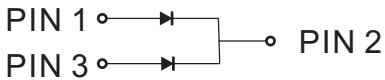
PARAMETER	SYMBOLS	SB 1620FCT	SB 1640FCT	SB 1645FCT	SB 1650FCT	SB 1660FCT	SB 1680FCT	SB 16100FCT	SB 16150FCT	SB 16200FCT	UNIT
Typical thermal resistance junction to case per leg	$R_{\theta JC}$	2.0									$^\circ\text{C}/\text{W}$

Rating and characteristic curves (SB1620FCT THRU SB16200FCT)



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Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

Marking

Type number	Marking code
SB1620FCT	SB1620FCT
SB1640FCT	SB1640FCT
SB1645FCT	SB1645FCT
SB1650FCT	SB1650FCT
SB1660FCT	SB1660FCT
SB1680FCT	SB1680FCT
SB16100FCT	SB16100FCT
SB16150FCT	SB16150FCT
SB16200FCT	SB16200FCT

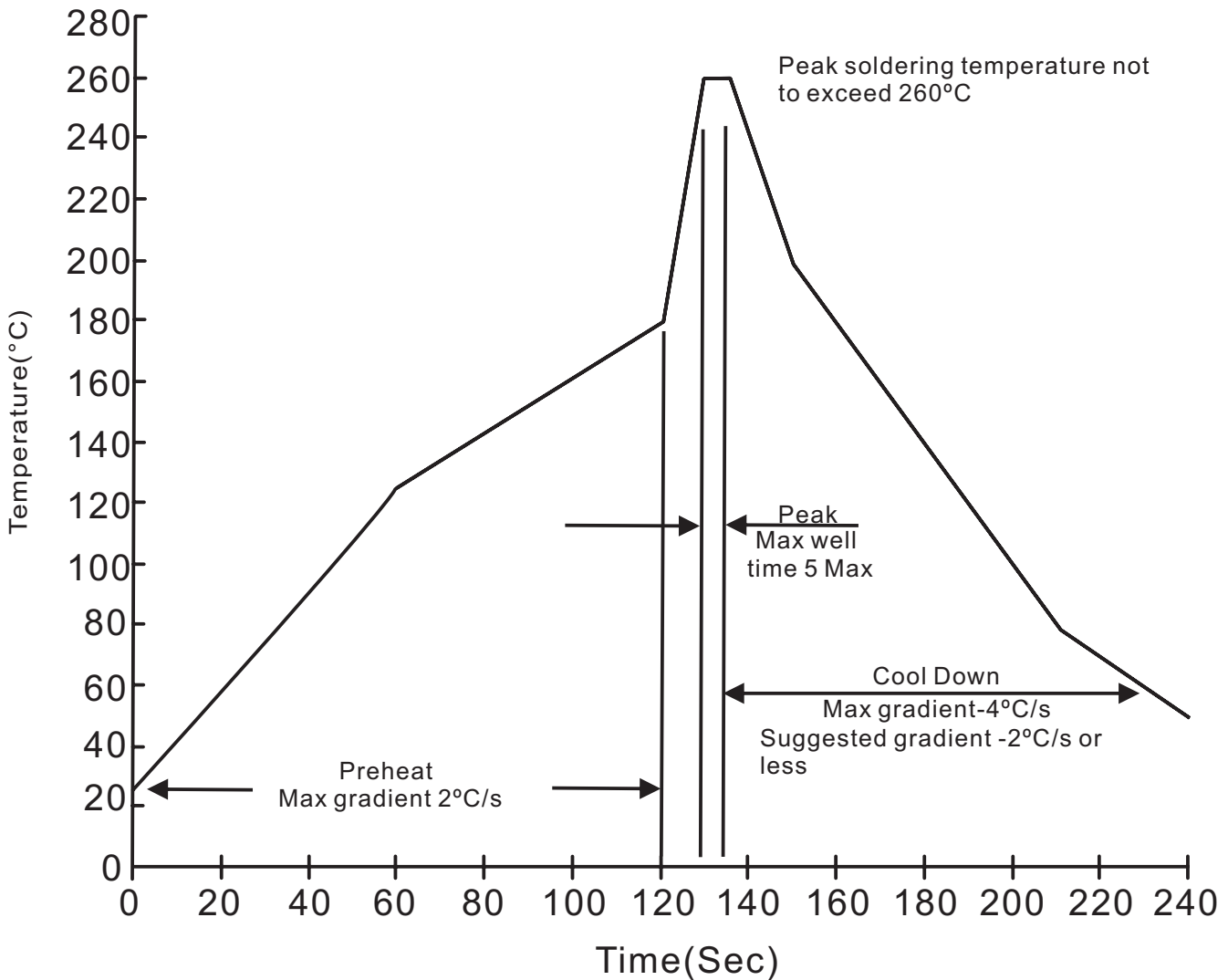
Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
ITO-220AB	50	525*32*7.0	1000	555*150*40	580*230*175	5,000	15.0

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Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



SB1620FCT THRU SB16200FCT**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec}$. immerse body into solder $1/16''\pm 1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=125^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A=25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031