

# SB1620CT THRU SB16200CT

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# SB1620CT THRU SB16200CT

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

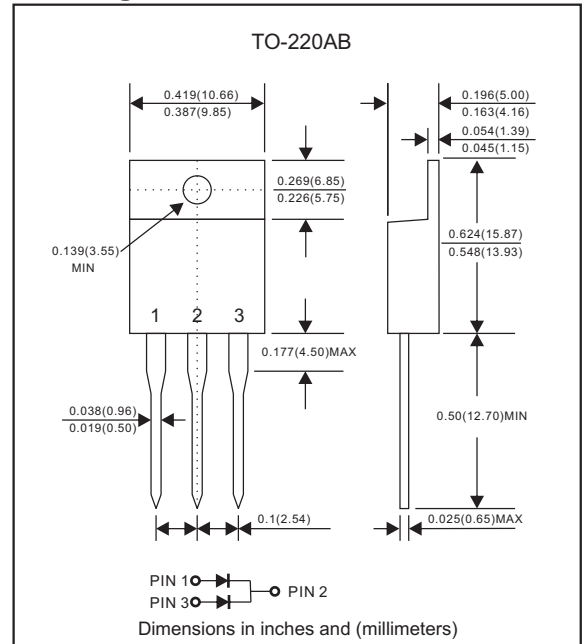
### Features

- 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. SB1620CT-H

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC TO-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 2.10 gram

### Package outline



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

PARAMETER	SYMBOLS	SB 1620CT	SB 1640CT	SB 1645CT	SB 1650CT	SB 1660CT	SB 1680CT	SB 16100CT	SB 16150CT	SB 16200CT	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									$^\circ\text{C}$

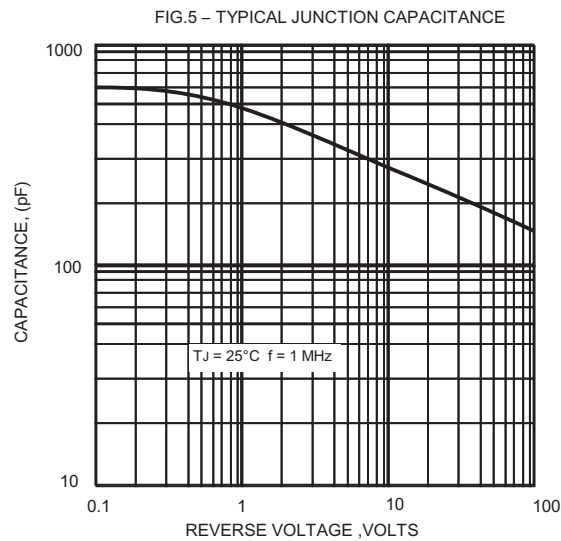
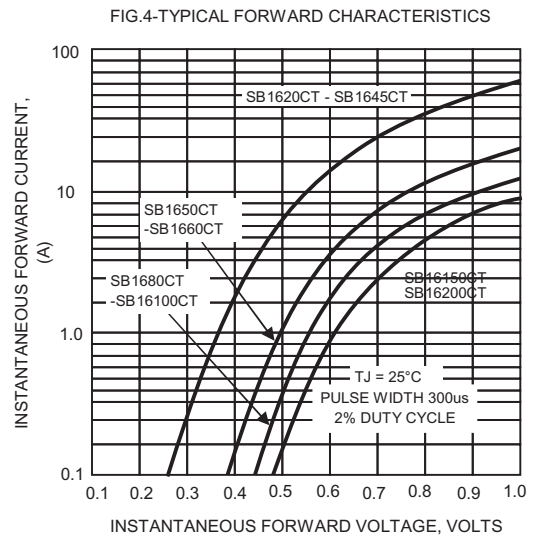
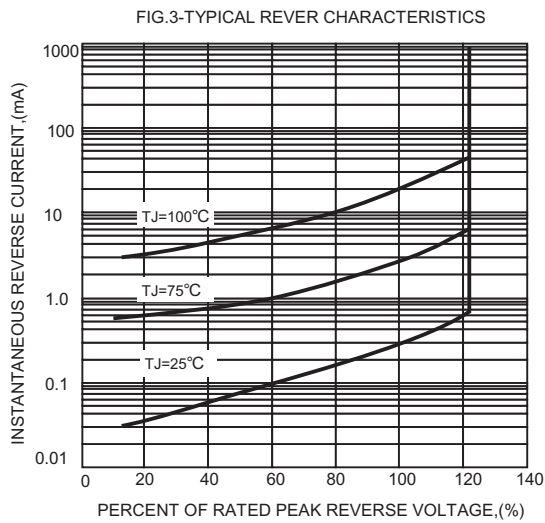
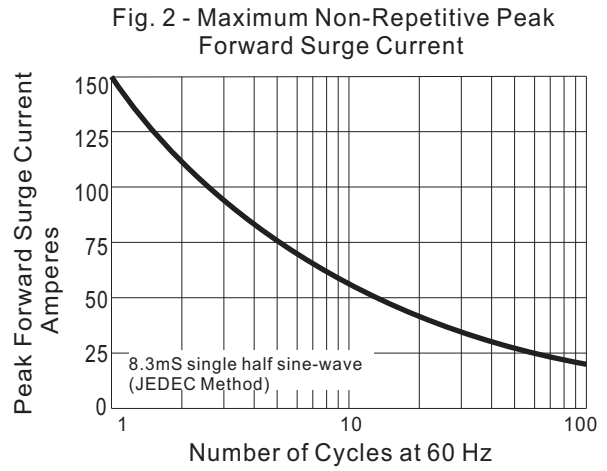
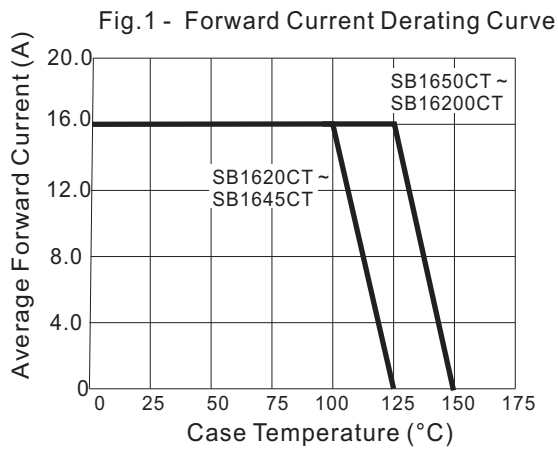
### Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	SB 1620CT	SB 1640CT	SB 1645CT	SB 1650CT	SB 1660CT	SB 1680CT	SB 16100CT	SB 16150CT	SB 16200CT	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

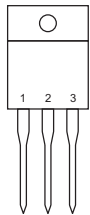
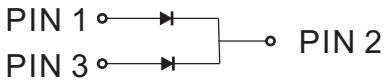
PARAMETER	SYMBOLS	SB 1620CT	SB 1640CT	SB 1645CT	SB 1650CT	SB 1660CT	SB 1680CT	SB 16100CT	SB 16150CT	SB 16200CT	UNIT
Typical thermal resistance junction to case per leg	$R_{\theta JC}$	2.0									$^\circ\text{C}/\text{W}$

## Rating and characteristic curves (SB1620CT THRU SB16200CT)



# SB1620CT THRU SB16200CT

## Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

## Marking

Type number	Marking code
SB1620CT	SB1620CT
SB1640CT	SB1640CT
SB1645CT	SB1645CT
SB1650CT	SB1650CT
SB1660CT	SB1660CT
SB1680CT	SB1680CT
SB16100CT	SB16100CT
SB16150CT	SB16150CT
SB16200CT	SB16200CT

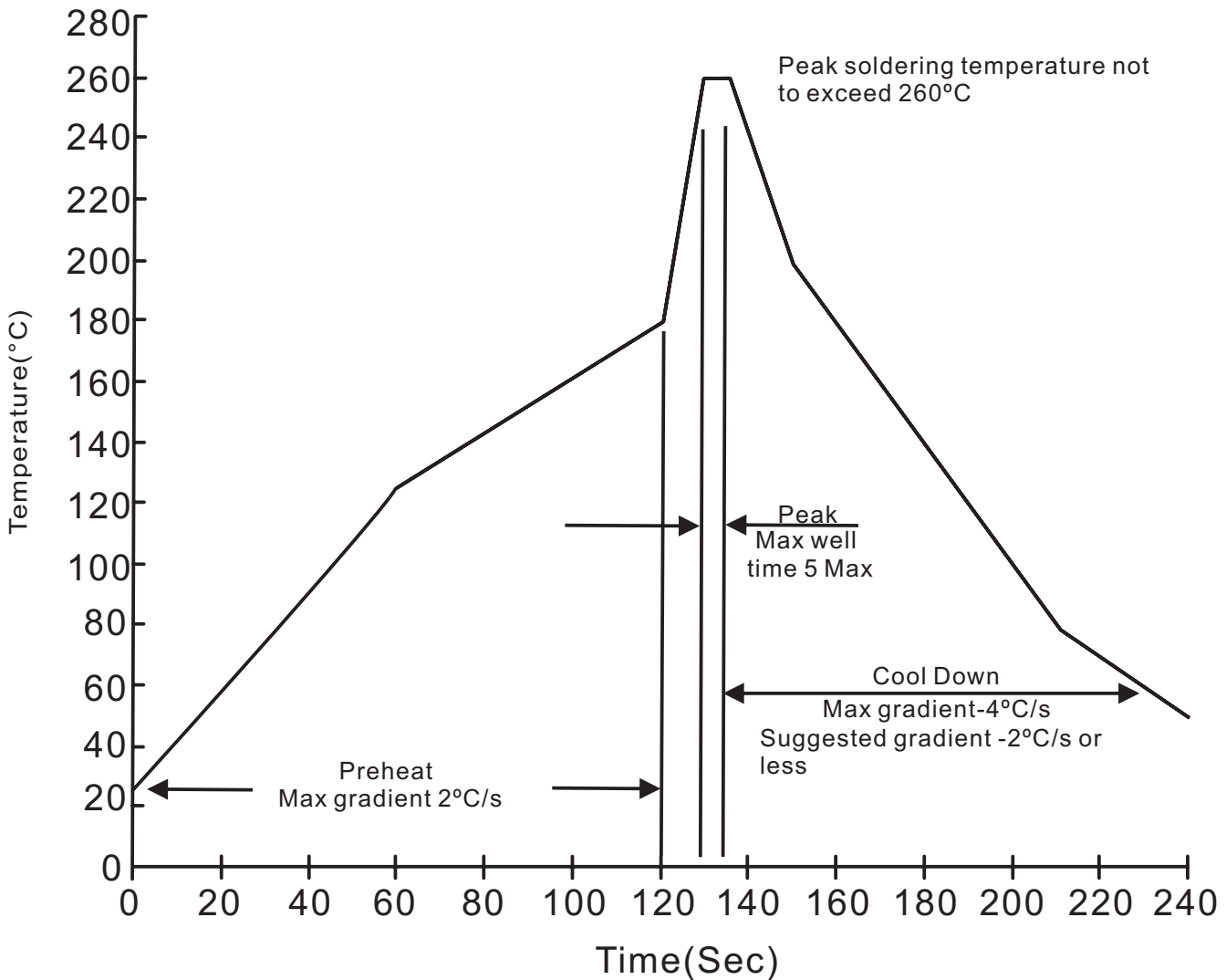
## Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AB	50	525*32*7.5	1000	555*150*40	580*230*175	5,000	15.0

# SB1620CT THRU SB16200CT

## Suggested thermal profiles for soldering processes

### 1. Lead free temperature profile wave-soldering



**SB1620CT THRU SB16200CT****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	$-55^{\circ}\text{C}$ 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 $175^{\circ}\text{C}$ for 1000 hrs.	MIL-STD-750D METHOD-1031