



UCBD10120SA

SiC-SBD DIODE

SILICON CARBIDE SCHOTTKY BARRIER DIODES

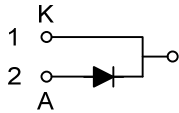
DESCRIPTION

The **UCBD10120SA** is an SiC Schottky barrier diodes (SBDs) feature high reverse voltage ratings. In addition to SBDs with short reverse recovery time (t_{rr}), provides 1200V SBDs with a junction barrier Schottky (JBS) structure that provide low leakage current (I_r) and high surge current capability required for switched-mode power supplies. These devices help improve the efficiency of switched-mode power supplies.

FEATURES

- * Zero Reverse Recovery Current
- * Humidity Resistant
- * High Frequency Operation
- * Temperature-Independent Switching Behavior

SYMBOL



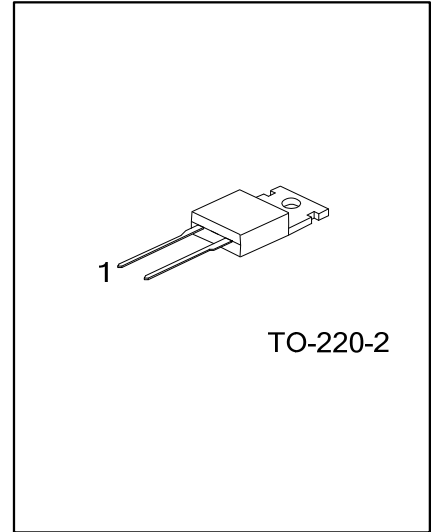
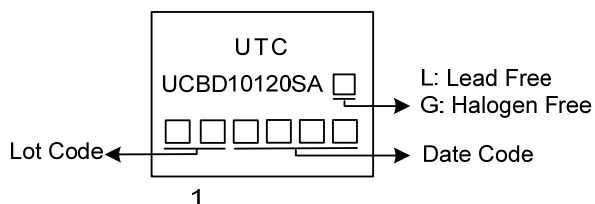
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
UCBD10120SAL-TA2-T	UCBD10120SAG-TA2-T	TO-220-2	K	A	Tube

Note: Pin Assignment: K: Cathode A: Anode

UCBD10120SAG-TA2-T	(1) Packing Type (2) Package Type (3) Green Package	(1) T: Tube (2) TA2: TO-220-2 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$, unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Reverse Voltage		V_{RRM}	1200	V
Surge Peak Reverse Voltage		V_{RSM}	1200	V
DC Blocking Voltage		V_R	1200	V
Continuous Forward Current	$T_C=25^{\circ}\text{C}$	I_F	23	A
	$T_C=135^{\circ}\text{C}$		12	A
	$T_C=147^{\circ}\text{C}$		10	A
Repetitive Peak Forward Surge Current	$T_J=25^{\circ}\text{C}$ $t_P=10\text{ms}$, Half Sine Wave	I_{FRM}	80	A
Non-Repetitive Peak Forward Surge Current	$T_J=25^{\circ}\text{C}$ $t_P=10\text{ms}$, Half Sine Wave	I_{FSM}	85	A
	$T_J=110^{\circ}\text{C}$ $t_P=10\text{ms}$, Half Sine Wave		80	A
Power Dissipation	$T_C=25^{\circ}\text{C}$	P_D	100	W
	$T_C=110^{\circ}\text{C}$		43	W
	$T_C=150^{\circ}\text{C}$		17	W
Operating Junction Temperature		T_J	-55 ~ +175	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55 ~ +175	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

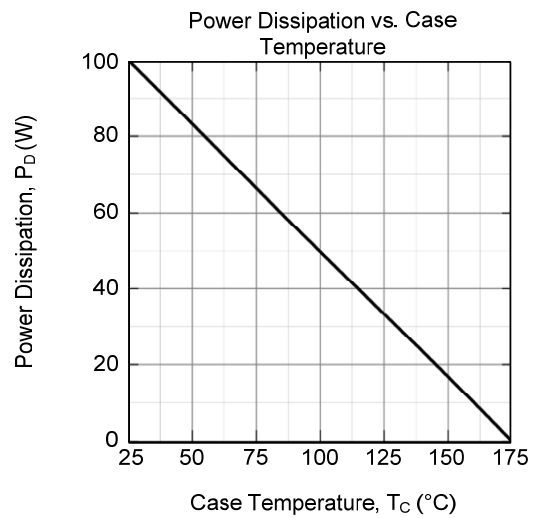
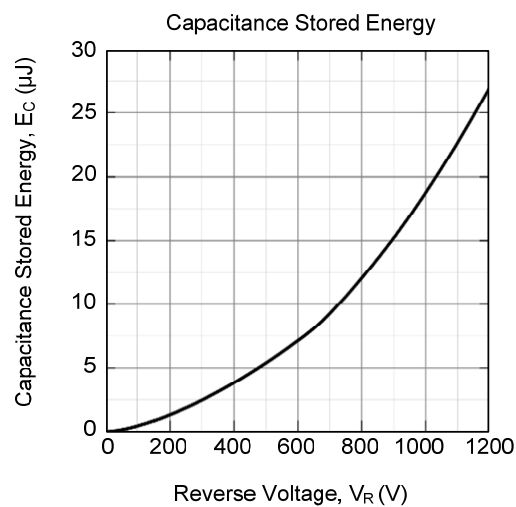
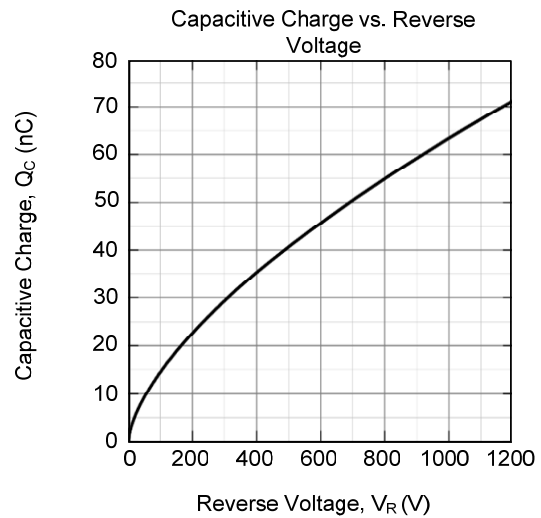
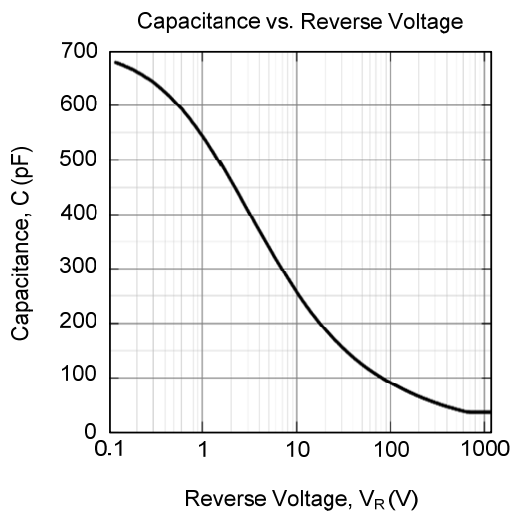
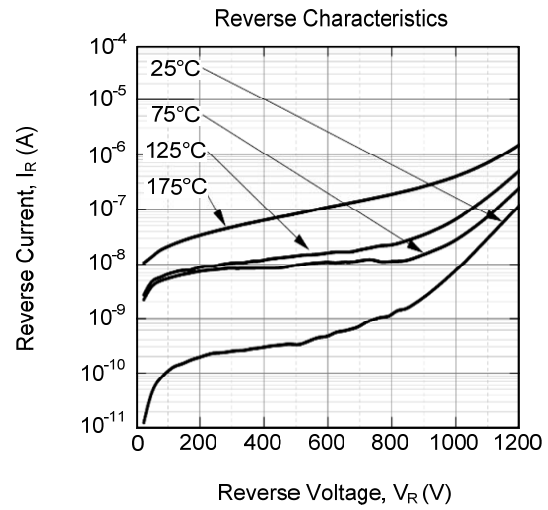
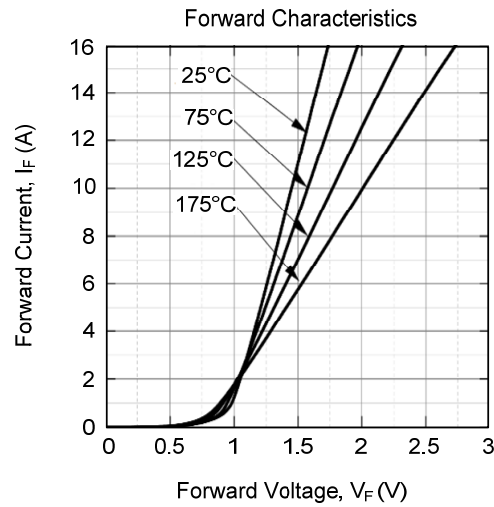
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	θ_{JC}	1.5	$^{\circ}\text{C/W}$

■ ELECTRICAL CHARACTERISTICS

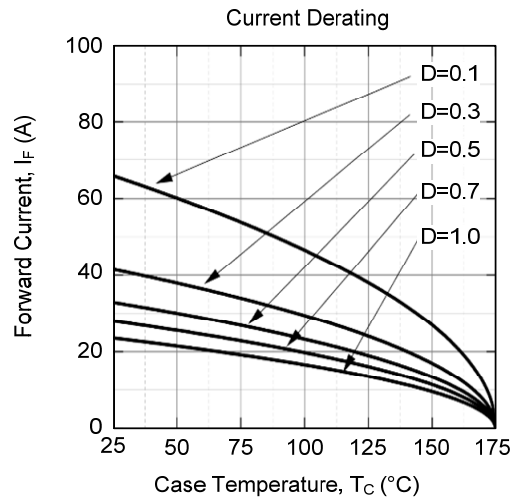
(Ratings at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DC Blocking Voltage	V_{DC}	$T_C=25^{\circ}\text{C}$	1200			V
Forward Voltage	V_F	$I_F=5\text{A}$, $T_J=25^{\circ}\text{C}$		1.21		V
		$I_F=10\text{A}$, $T_J=25^{\circ}\text{C}$		1.44	1.6	V
		$I_F=10\text{A}$, $T_J=175^{\circ}\text{C}$		1.99		V
Reverse Current	I_R	$V_R=1200\text{V}$, $T_J=25^{\circ}\text{C}$		1	50	μA
		$V_R=1200\text{V}$, $T_J=175^{\circ}\text{C}$		15		μA
Total Capacitive Charge	Q_C	$V_R=800\text{V}$		55		nC
Total Capacitance	C	$V_R=1\text{V}$, $f=1\text{MHz}$		542		pF
		$V_R=400\text{V}$, $f=1\text{MHz}$		41		pF
		$V_R=800\text{V}$, $f=1\text{MHz}$		38		pF
Capacitance Stored Energy	E_C	$V_R=800\text{V}$		12		μJ

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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