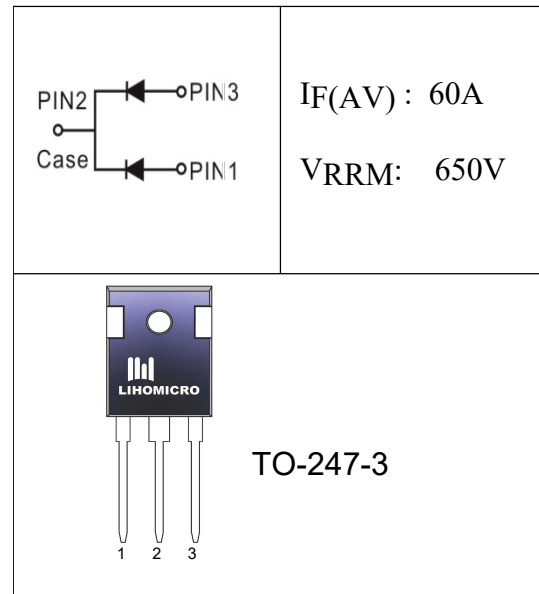


Silicon Carbide Schottky Diode
●Features

- High Surge Current Capacity
- Low Forward Voltage Drop
- Low Power Loss & High Efficiency
- Guard Ring & Environmental Protection
- High Temperature Application
- Green Molding Compound(No Br,Sb)

●Application

- Half-Bridge/Full-Bridge Switched-Mode Power
- PC Power


●Ordering Information:

Part Number	LHC60A65
Package	TO-247-3
Basic Ordering Unit (pcs)	330
Normal Package Material Ordering Code	LHC30A65T2T-TO247-3-TU
Halogen Free Ordering Code	LHC30A65T2T-TO247-3-TU-HF

●Maximum Ratings Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise Noted)

PARAMETER	SYMBOL	Value	UNIT
Repetitive Peak Reverse Voltage	VRRM	650	V
Working Peak Reverse Voltage	V_{RWM}	650	V
DC blocking Voltage	V_{RM}	650	V
Average Rectified Forward Current (Rated VR-20KHz Square Wave)-50% duty cycle	IF(AV)	60	A
Repetitive Peak Forward surge current (surge applied at rated load conditions half wave, single phase, 60Hz)	I_{FSM}	360	A
Operating Temperature	T_J	-55~+175	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+175	$^\circ\text{C}$

●Electronic Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Forward Voltage Drop	VF	$I_F=30A, T_J=25^{\circ}C$	--	1.35	1.7	V
		$I_F=30A, T_J=175^{\circ}C$	--	1.6	2.0	
Reverse Current	IR	$V_R=V_{RRM}, T_J=25^{\circ}C$	--	5	50	uA
		$V_R=V_{RRM}, T_J=175^{\circ}C$	--	60	200	nA
Total Capacitive Charge	Qc	$V_R = 400 V, T_J = 25^{\circ}C$	--	82	--	nC
Total Capacitance	C _T	$V_R=0V, T_J=25^{\circ}C, f=1MHz$	--	1680	--	pF
		$V_R=200V, T_J=25^{\circ}C, f=1MHz$	--	163	--	
		$V_R=400V, T_J=25^{\circ}C, f=1MHz$	--	152	--	
Capacitance Stored Energy	Ec	$V_R=400V$	--	7.0	--	μJ

●Thermal Characteristics

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance Junction-case	RthJC	1.0	°C/W

Note:

1.300Us pulse width 2% duty cycle

2.Thermal Resistance test performed in accordance with JESD-51

●Ratings and Characteristics Curves(Per leg)

Figure 1. Forward Characteristics

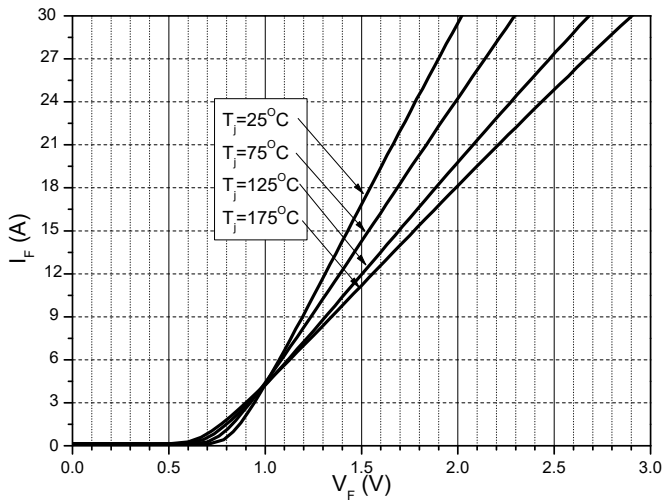


Figure 2. Reverse Characteristics

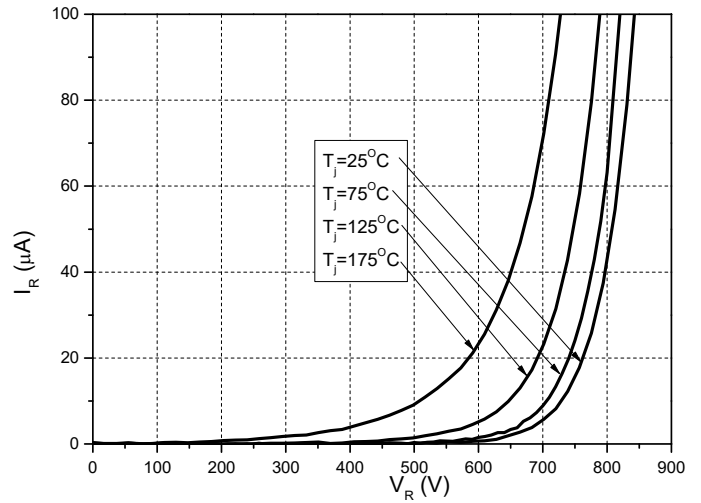


Figure 3. Capacitance vs. Reverse Voltage

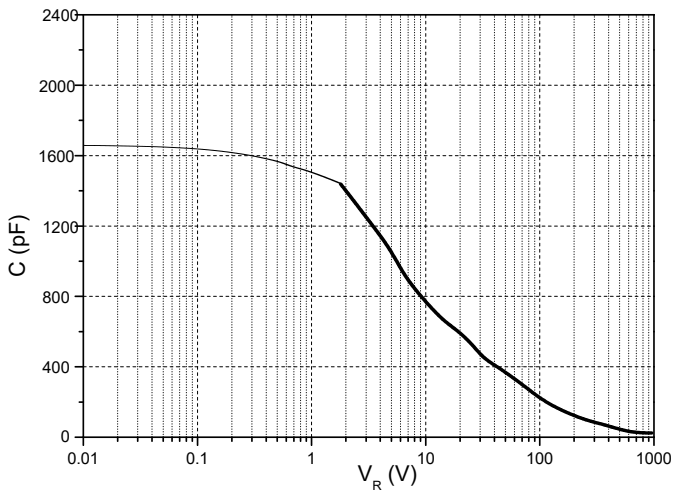


Figure 4. Total Capacitance Charge vs. Reverse Voltage

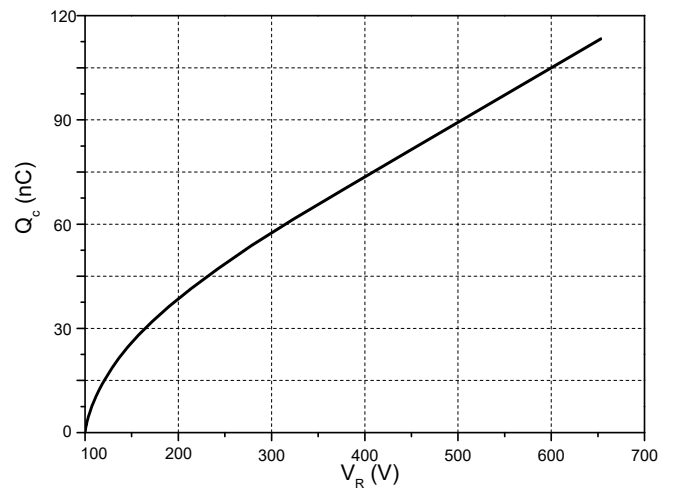


Figure 5. Capacitance Stored Energy

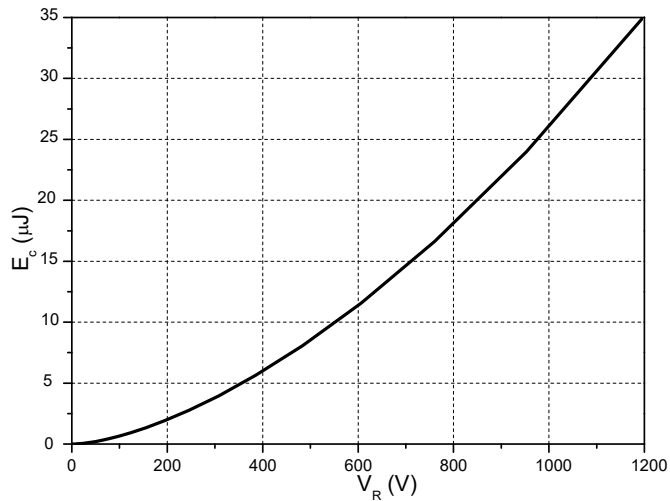
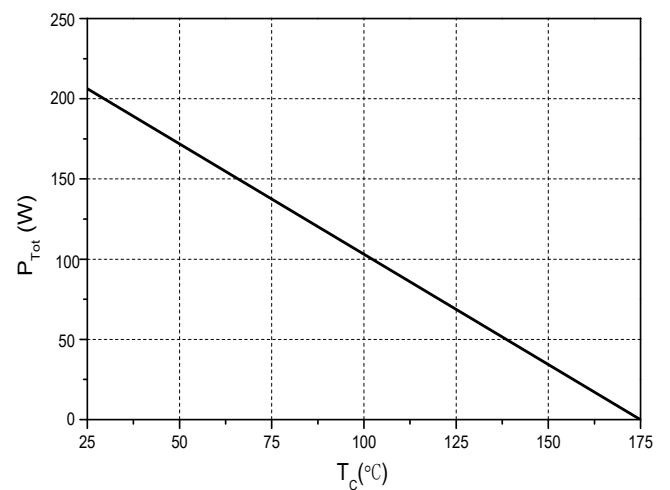


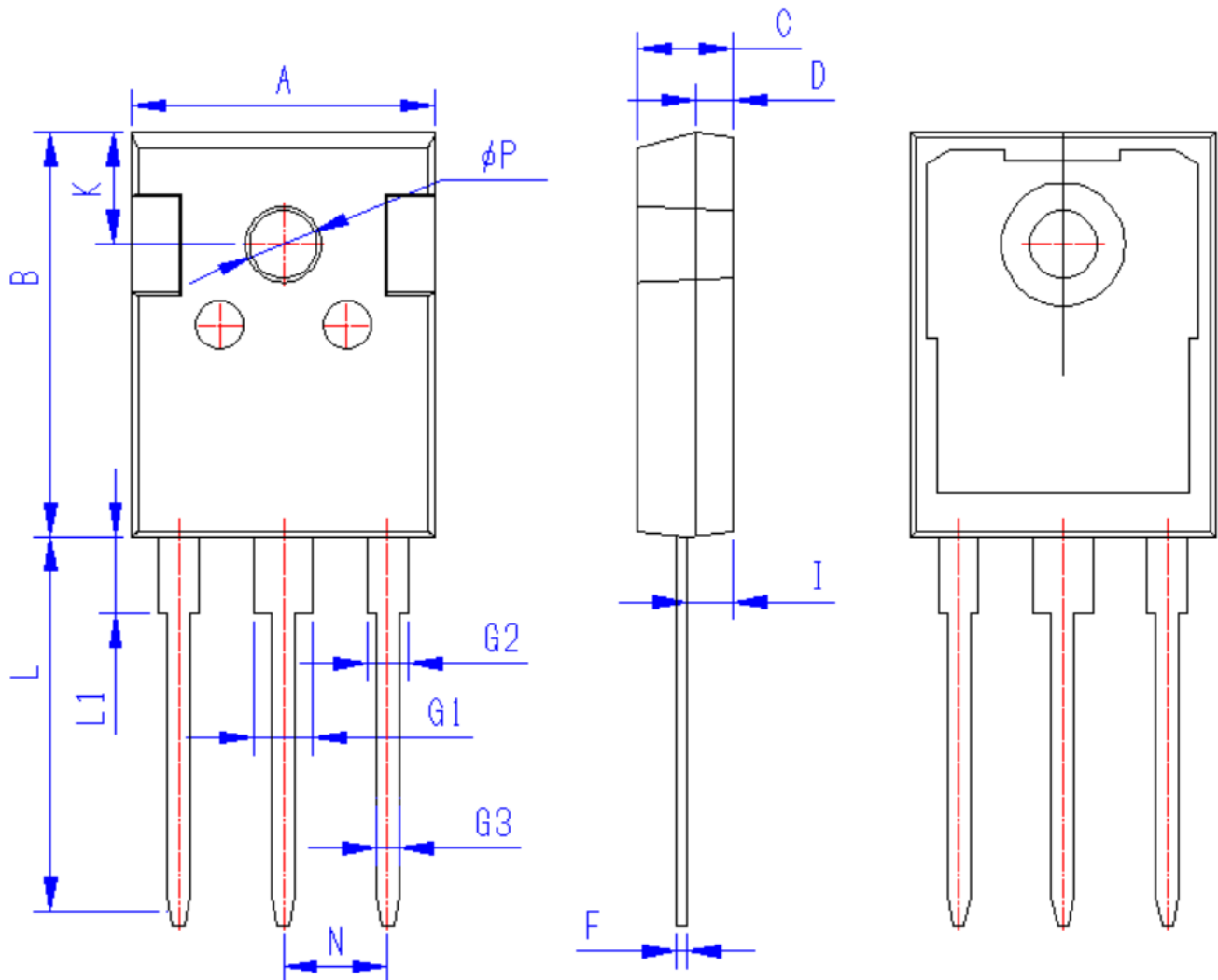
Figure 6. Power Derating



•Dimensions (TO-247-3)

UNIT:mm

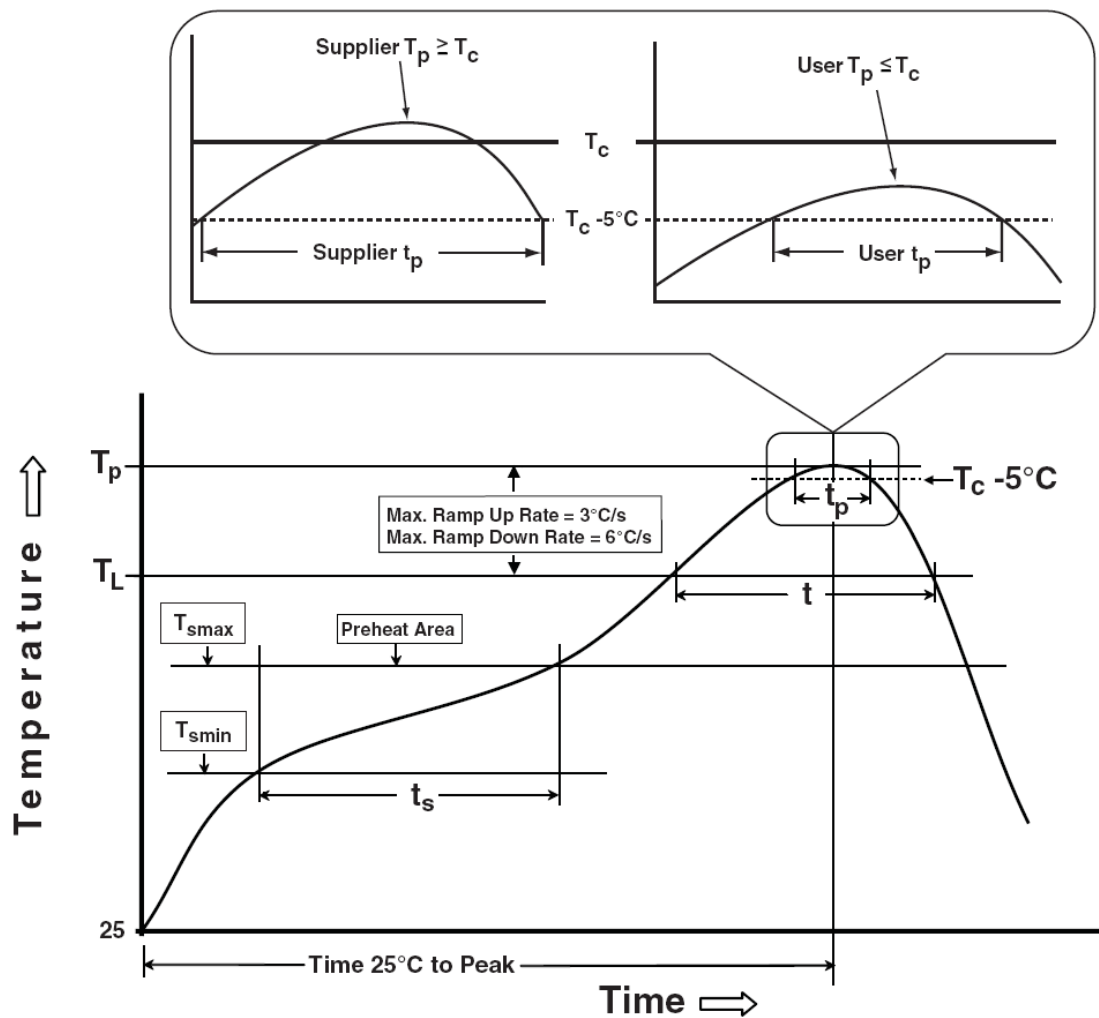
SYMBOL	Min	Max	SYMBOL	Min	Max
A	15.60	16.00	G2	1.95	2.25
B	20.80	21.20	G3	1.15	1.25
C	4.80	5.20	N	5.25	5.65
D	1.85	2.15	L1	4.00	4.30
K	6.00	6.30	L	19.60	20.40
F	0.50	0.70	I	2.30	2.50
G1	3.00	3.30	ΦP	3.30	3.70



• Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0

• Classification Profile



● Classification Reflow Profiles

Average ramp-up rate (T_L to T_P)	<3°C/sec	<3°C/sec
Preheat		
- Temperature Min ($T_{s_{min}}$)	100°C	150°C
- Temperature Max ($T_{s_{max}}$)	150°C	200°C
- Time (min to max) (ts)	60 to 120 sec	60 to 180 sec
$T_{s_{max}}$ to T_L		
- Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above:		
- Temperature (T_L)	183°C	217°C
- Time (t_L)	60 to 150 sec	60 to 150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t_P)	10 to 30 sec	20 to 40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

Flow (wave) soldering (solder dipping)

Products	Peak Temperature	Dipping Time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec

● Reliability Test Program

Testitem	Method	Description
Solderability	JESD-22,B102	5sec , 245°C
Holt	JESD-22,A108	1000Hrs,Bias@125°C
PCT	JESD-22,A102	168Hrs,100%RH,2atm,121°C
TCT	JESD-22,A104	500Cycles, -65°C ~150°C