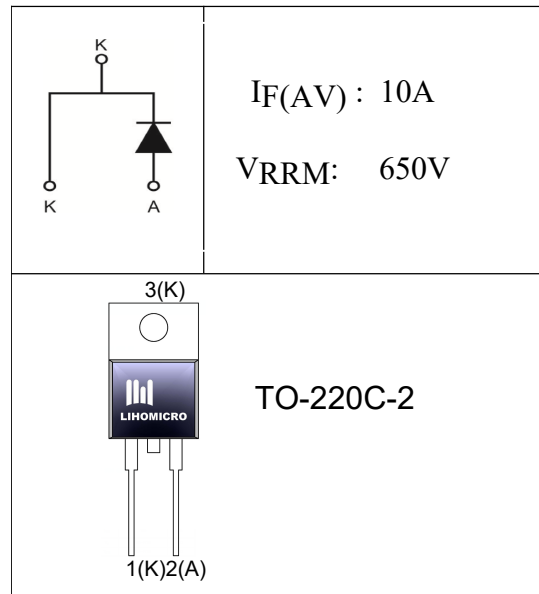


**●Features**

- 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	LHC10A65
Package	TO-220C-2
Basic Ordering Unit (pcs)	1000
Normal Package Material Ordering Code	LHC10A65T6-TO220-2-TU
Halogen Free Ordering Code	LHC10A65T6-TO220-2-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)	10	A
Repetitive Peak Forward surge current (surge applied at rated load conditions half wave, single phase, 60Hz)	$I_{FSM}$	105	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	$I_F=10A, T_J=25^{\circ}C$	--	1.4	1.7	V
		$I_F=10A, T_J=175^{\circ}C$	--	1.7	2.0	
Reverse Current	IR	$V_R=V_{RRM}, T_J=25^{\circ}C$	--	1	20	uA
		$V_R=V_{RRM}, T_J=175^{\circ}C$	--	20	200	nA
Total Capacitive Charge	Qc	$V_R = 400 V, T_J = 25^{\circ}C$	--	28	--	nC
Total Capacitance	C <sub>T</sub>	$V_R=0V, T_J=25^{\circ}C, f=1MHz$	--	550	--	pF
		$V_R=200V, T_J=25^{\circ}C, f=1MHz$	--	53	--	
		$V_R=400V, T_J=25^{\circ}C, f=1MHz$	--	48	--	
Capacitance Stored Energy	Ec	$V_R=400V$	--	7.0	--	μJ

**●Thermal Characteristics**

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance Junction-case	Rth <sub>JC</sub>	1.09	°C/W

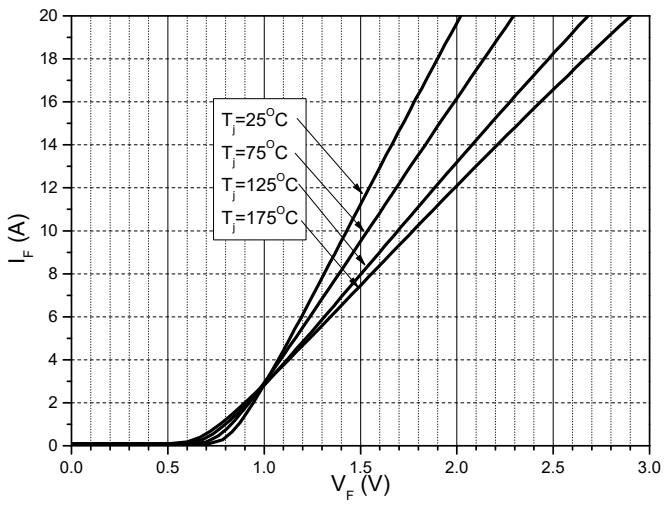
Note:

1.300Us pulse width 2% duty cycle

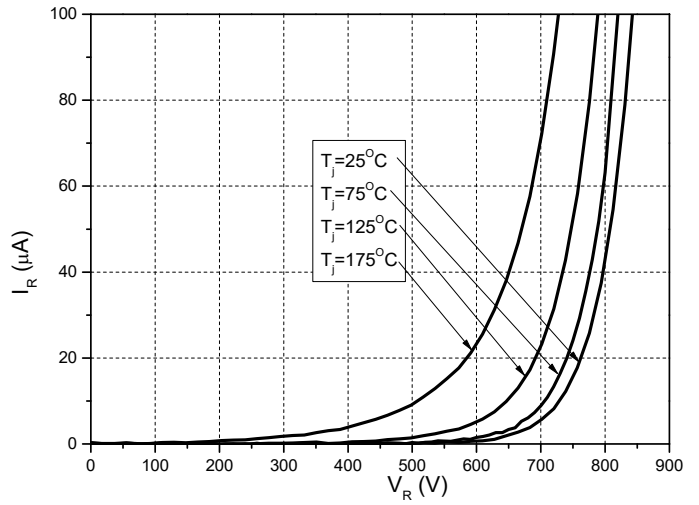
2.Thermal Resistance test performed in accordance with JESD-51

●Ratings and Characteristics Curves

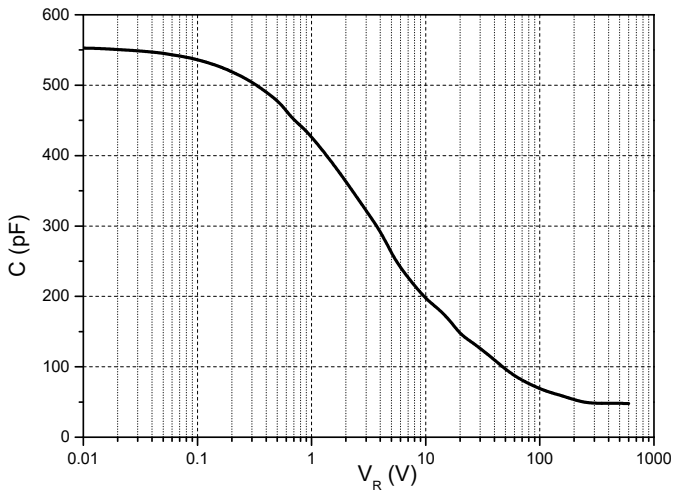
**Figure 1. Forward Characteristics**



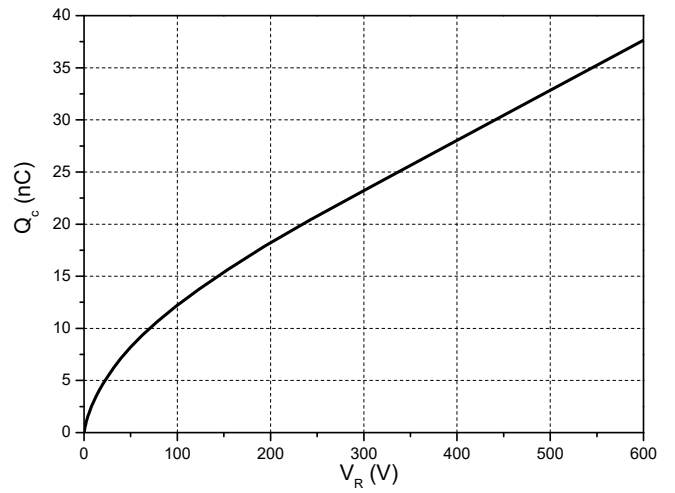
**Figure 2. Reverse Characteristics**



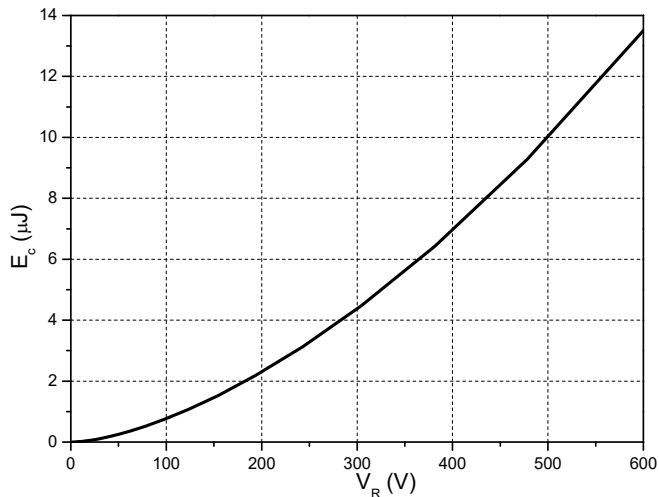
**Figure 3. Capacitance vs. Reverse Voltage**



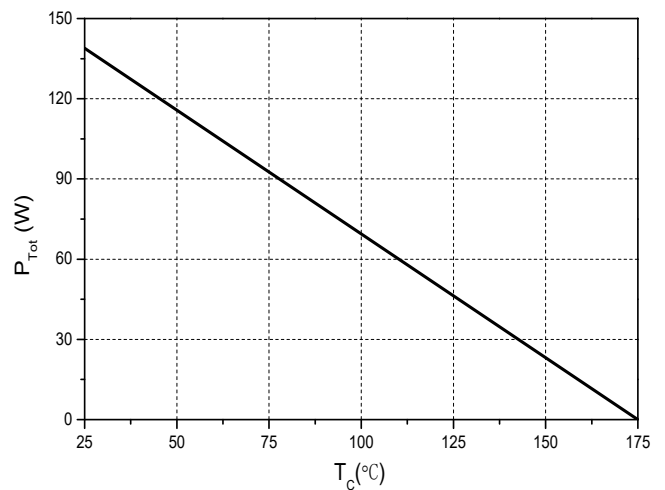
**Figure 4. Total Capacitance Charge vs. Reverse Voltage**



**Figure 5. Capacitance Stored Energy**



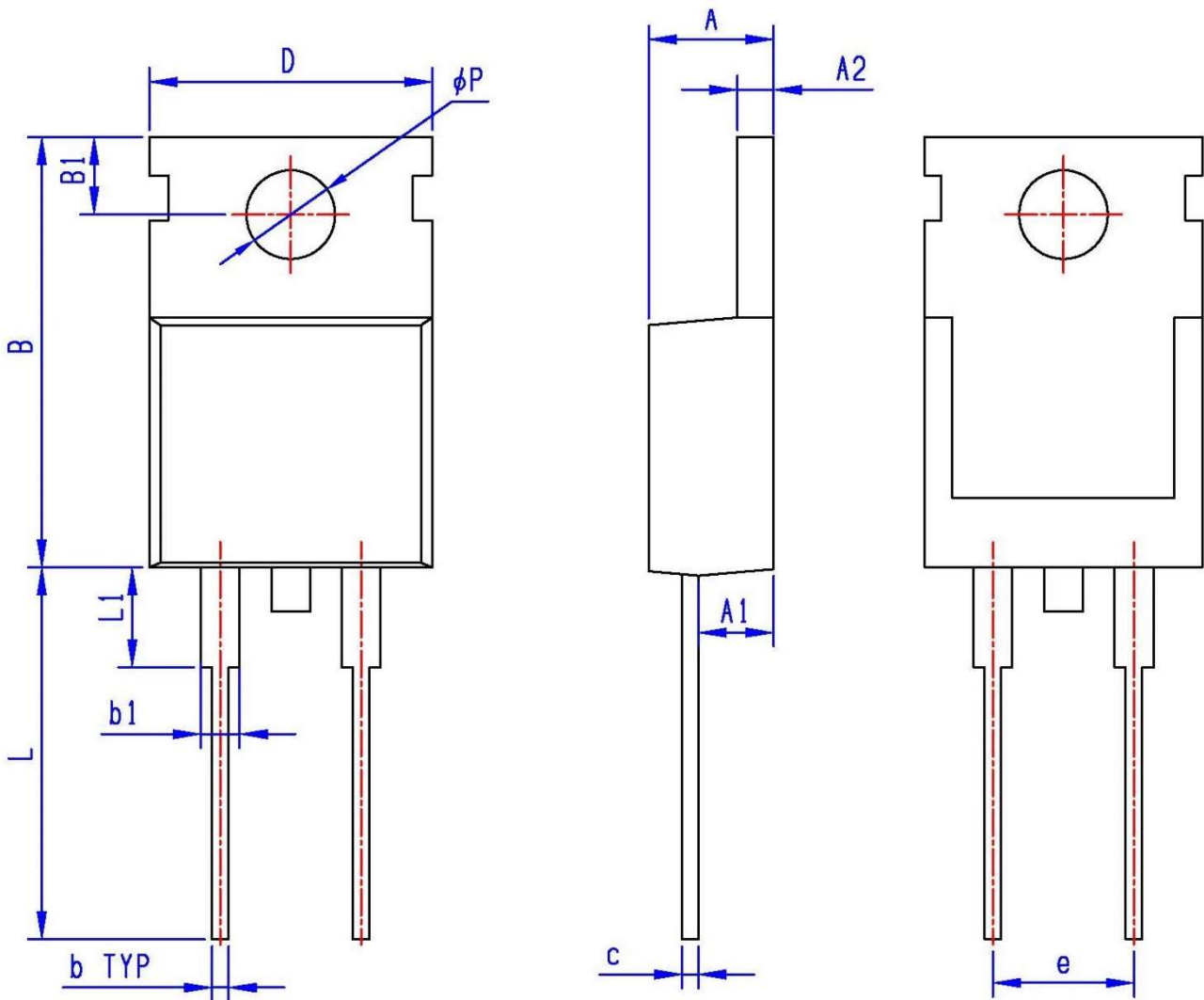
**Figure 6. Power Derating**



•Dimensions (TO-220C-2)

UNIT:mm

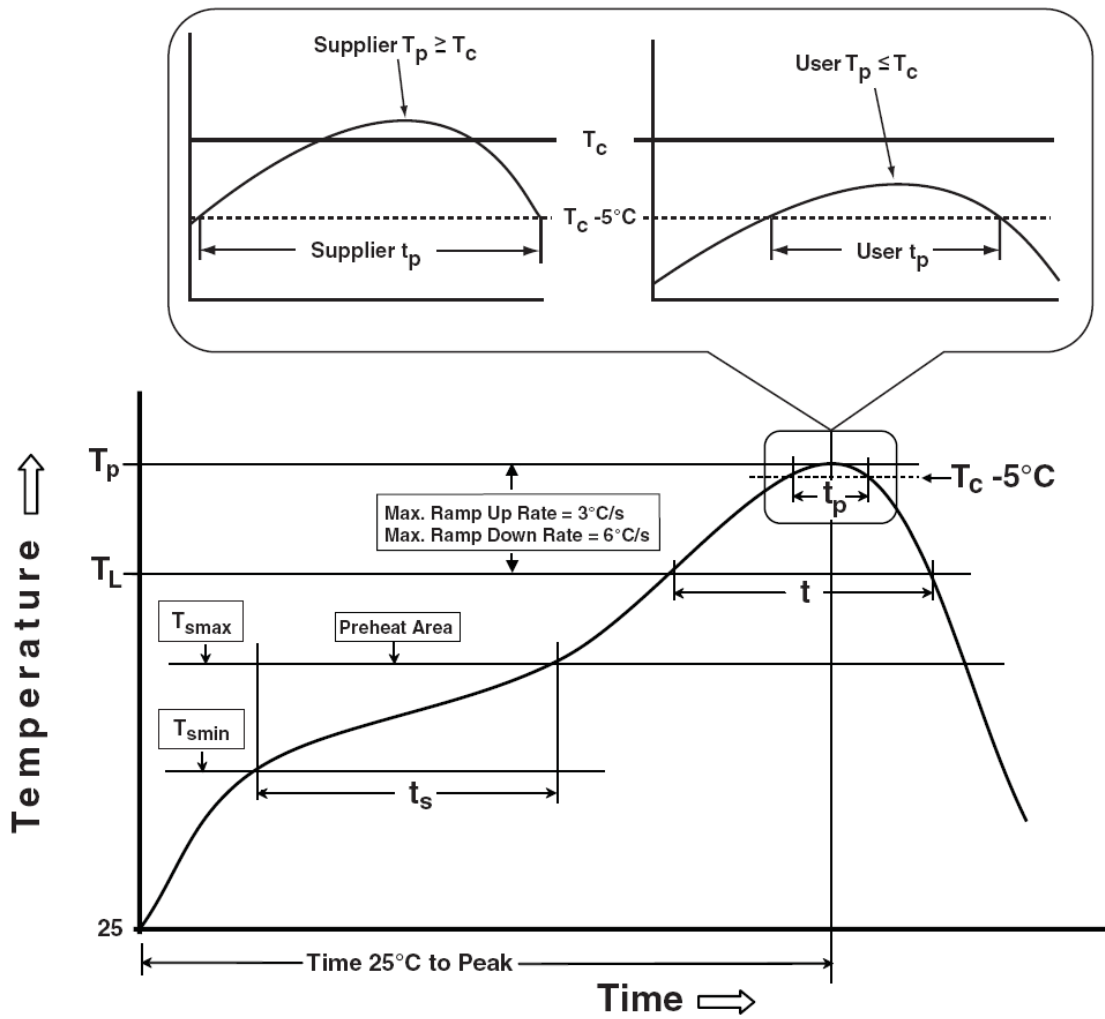
SYMBOL	min	max	SYMBOL	min	max
A	4.25	4.85	B1	2.60	3.00
A1	2.30	3.00	e	4.95	5.25
A2	1.20	1.40	L	12.40	14.20
b	0.60	0.90	L1	2.40	3.40
b1	1.10	1.70	∅P	3.50	3.90
c	0.40	0.70			
D	9.80	10.60			
B	15.20	16.20			



● 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