/ Descriptions

Insulated-Gate Bipolar Transistor in a TO-247 Plastic Package.

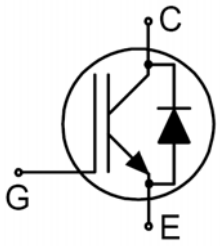
/ Features

Low gate charge,, Low saturation voltage ,Positive temperature coefficient, RoHS product.

/ Applications

General purpose inverter, Frequency converters, Induction Heating(IH), Uninterrupted Power Supply(UPS).

/ Equivalent Circuit



/ Pinning

PIN1 Gate PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

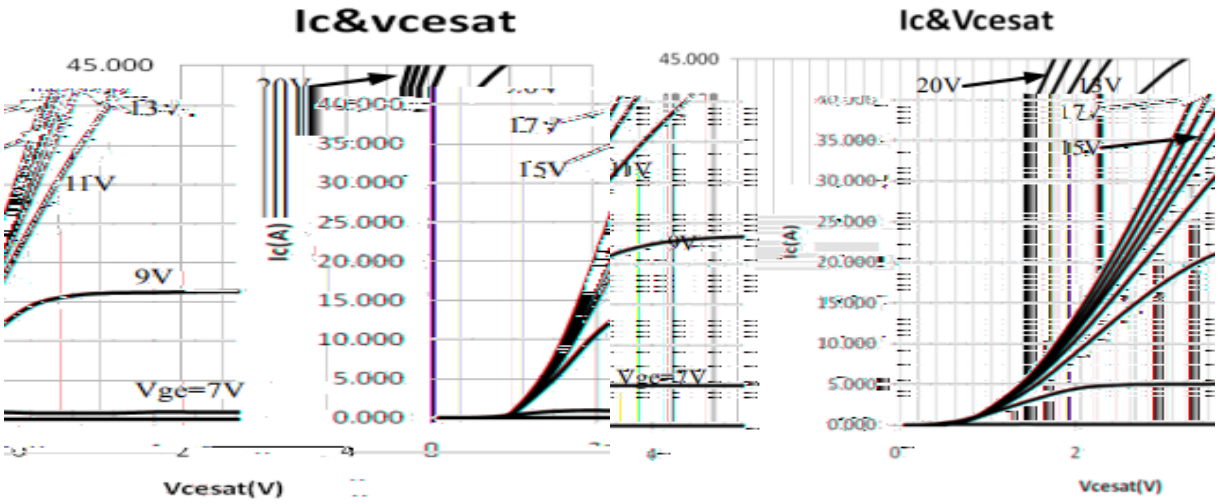
See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

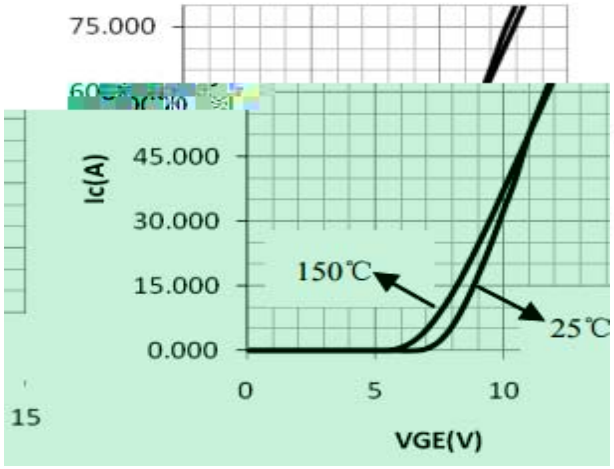
Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	1200	V
Gate-emitter voltage	V_{GES}	±20	V
Collector current	I_C	50	A
Collector current@T_C=100℃		25	A
Collector peak current, T_P limited by T_{JMAX}	I_{CM}	60	A
Diode forward current@T_C=100℃	I_F	25	A
Diode maximum forward current	I_{FM}	75	A
Power dissipation(T_C=25℃)	P_D	350	W
Operating junction and storage temperature range	T_J, T_{stg}	-55～150	
Maximum temperature for soldering	T_L	300	
IGBT thermal resistance,junction-case	$R_{th(j-c)}$	0.4	/W
Diode thermal resistance,junction-case	$R_{th(j-C)}$	2	/W
Thermal resistance,junction-ambient	$R_{th(j-a)}$	40	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-on delay time	$t_{d(ON)}$	V_{CE}=600V I_C=25A R_G=10Ω Inductive Load	-	90	-	ns
Rise time	t_r		-	75	-	
Turn-off delay time	$t_{d(OFF)}$		-	210	-	
Fall time	t_f		-	100	-	
Turn-On Switching Loss	E_{on}		-	2.8	-	mJ

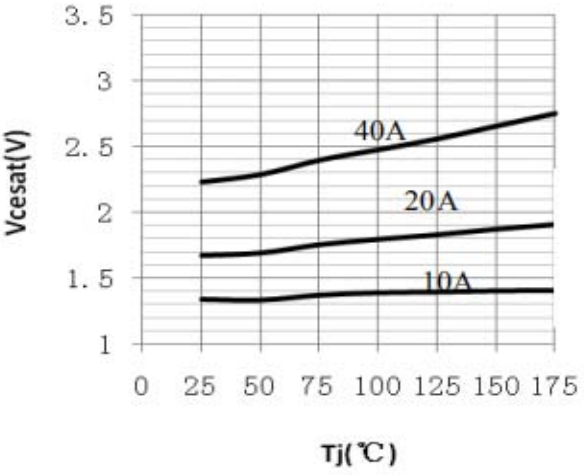
/ Electrical Characteristic Curve



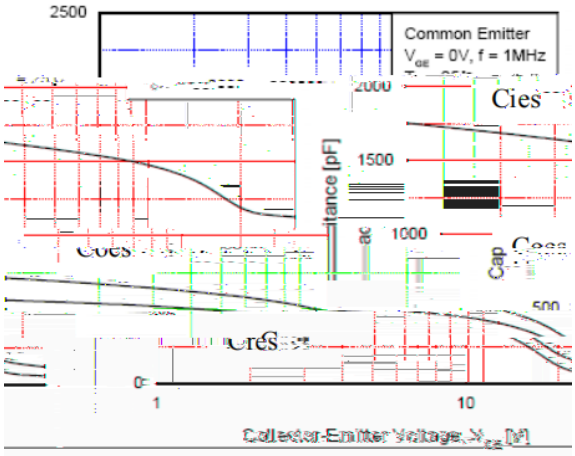
1.Typical Output Characteristics(Tj=25) 2.Typical Output Characteristics(Tj=150)



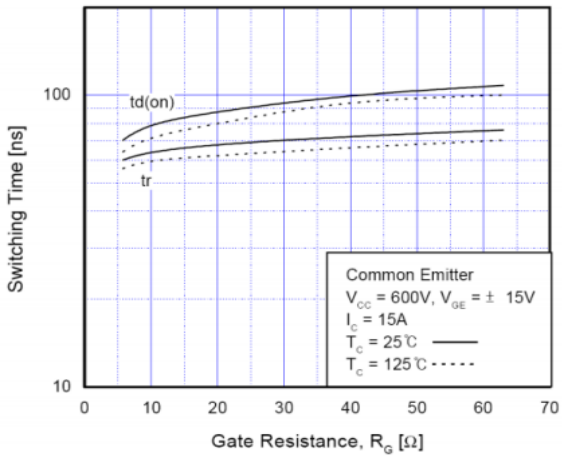
3.Typical Saturation Voltage Characteristics



4.Saturation Voltage vs. Case Temperature at Variant Current Level

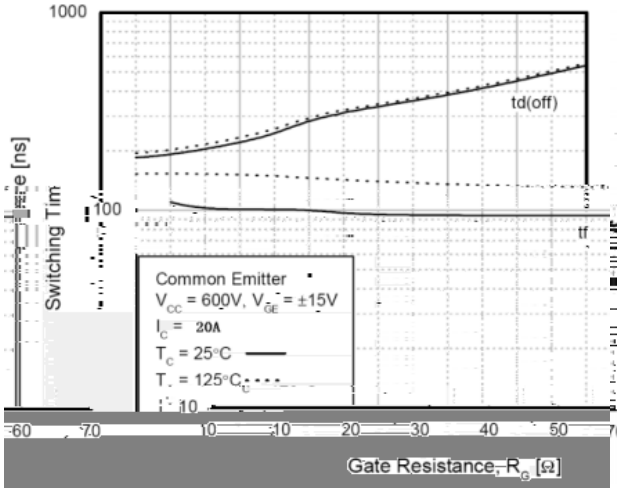


5.Capacitance Characteristics

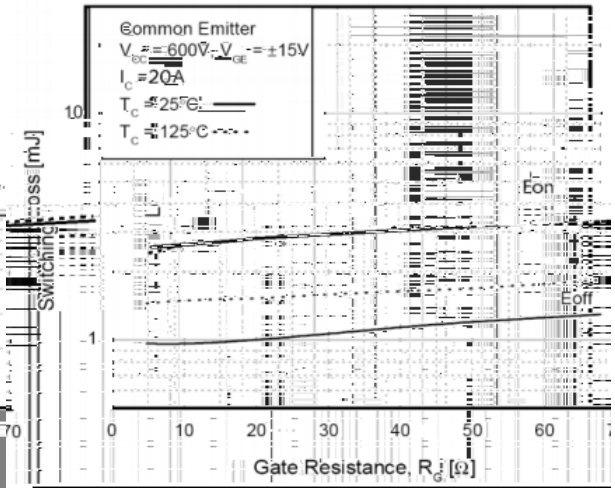


6.Turn-On Characteristics vs. Gate Resistance

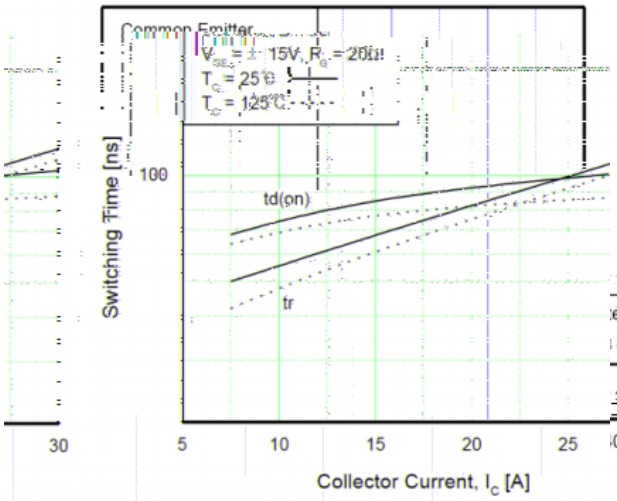
/ Electrical Characteristic Curve



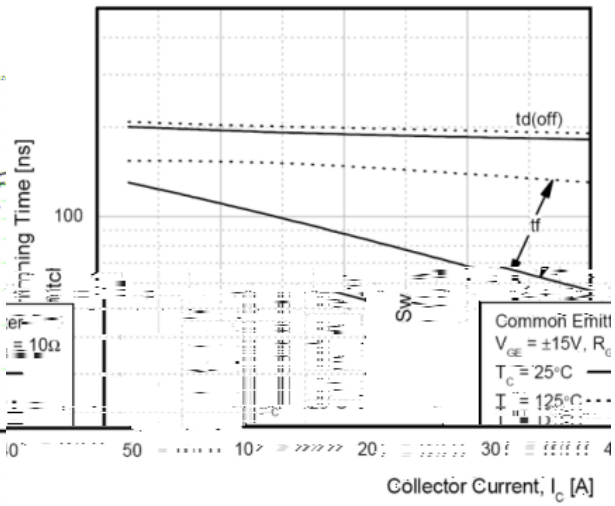
7.Turn-Off Characteristics vs. Gate Resistance



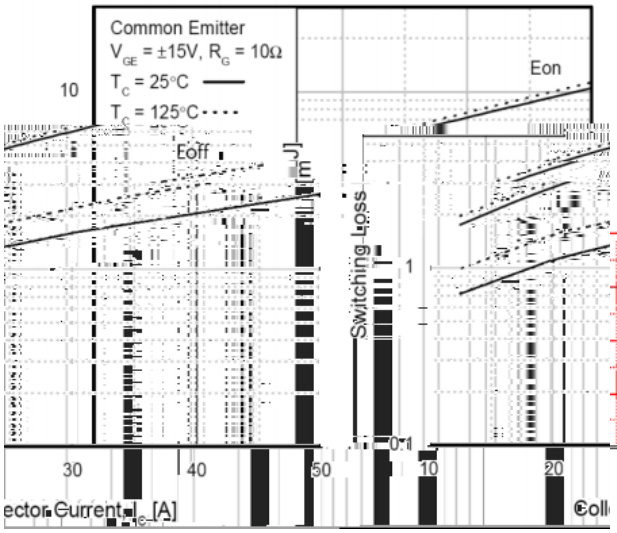
8.Switching Loss vs. Gate Resistance



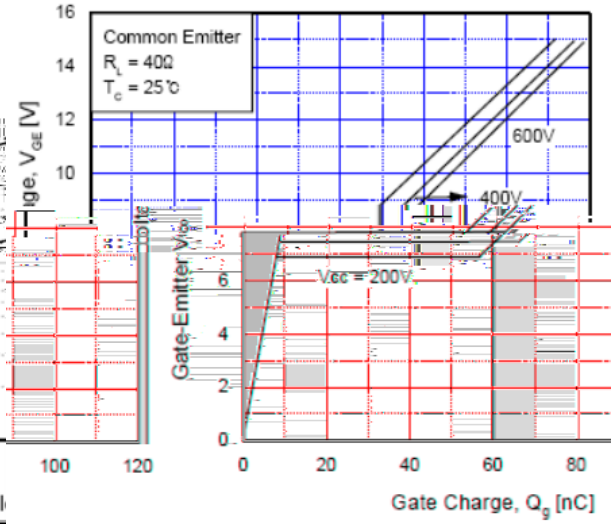
9.Turn-On Characteristics vs. Collector Current



10.Turn-Off Characteristics vs. Collector Current

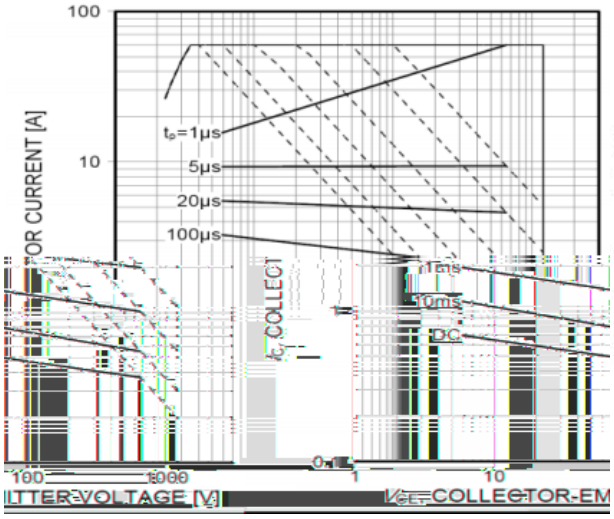


11.Switching Loss vs. Collector Current

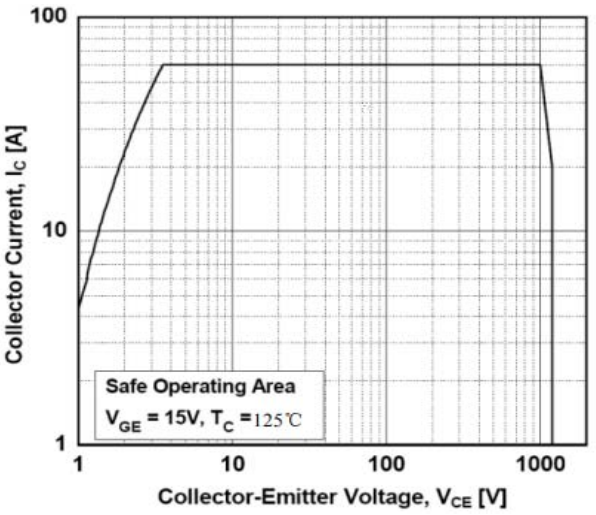


12.Gate Charge Characteristics

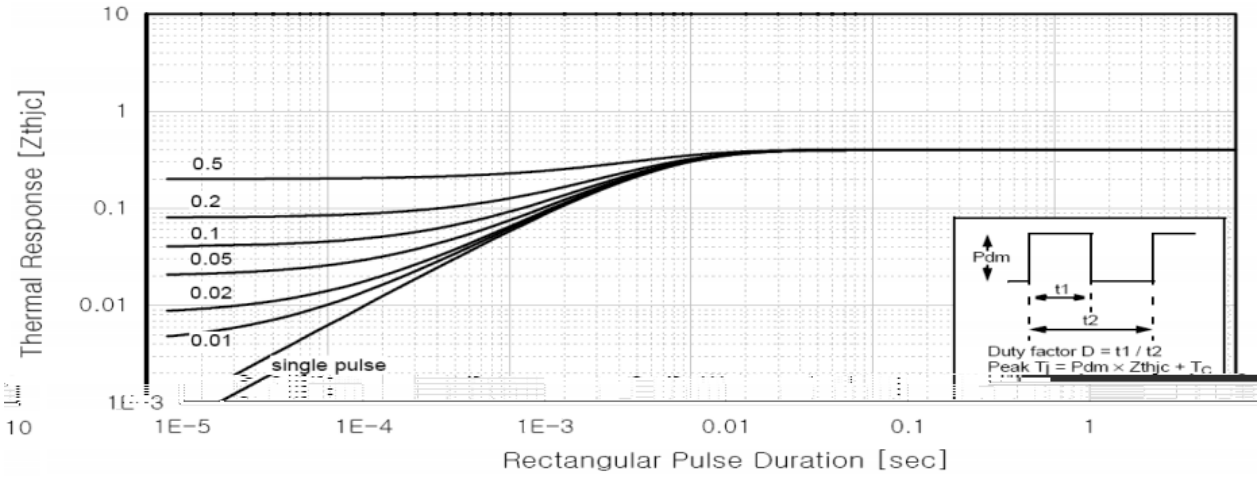
/ Electrical Characteristic Curve



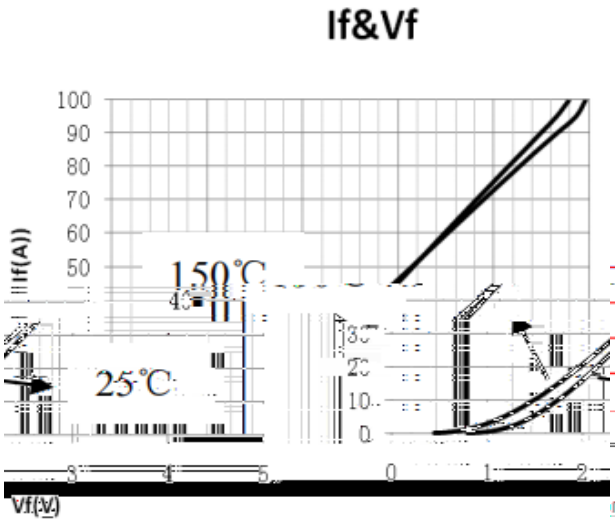
13.SOA Characteristics



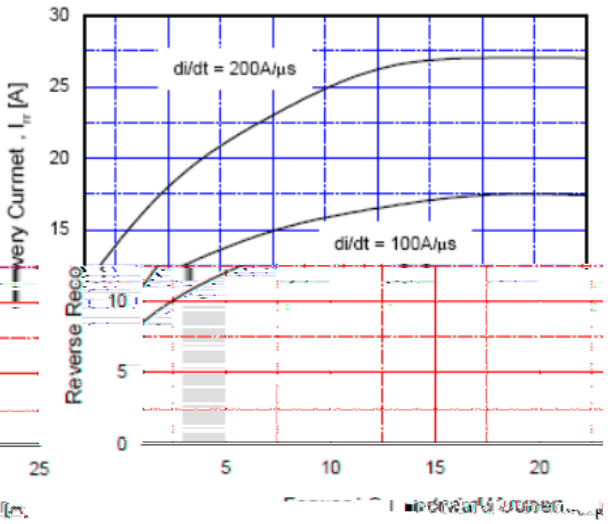
14.Turn-Off SOA



15.Transient Thermal Impedance

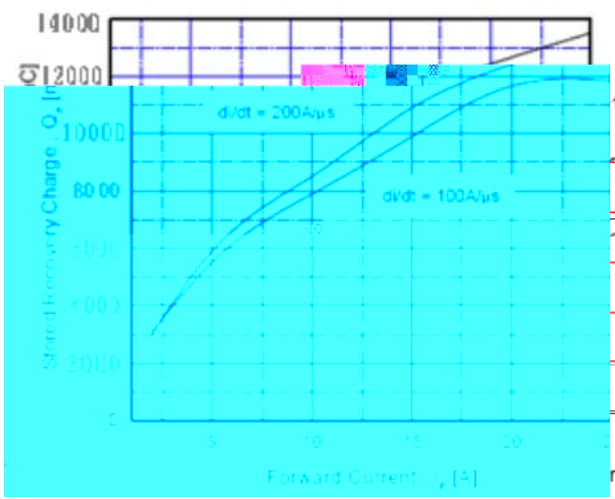


16.Forward Characteristics

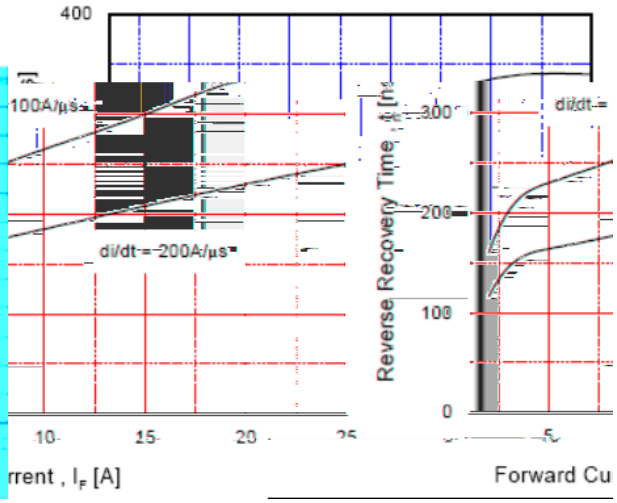


17.Reverse Recovery Current

/ Electrical Characteristic Curve

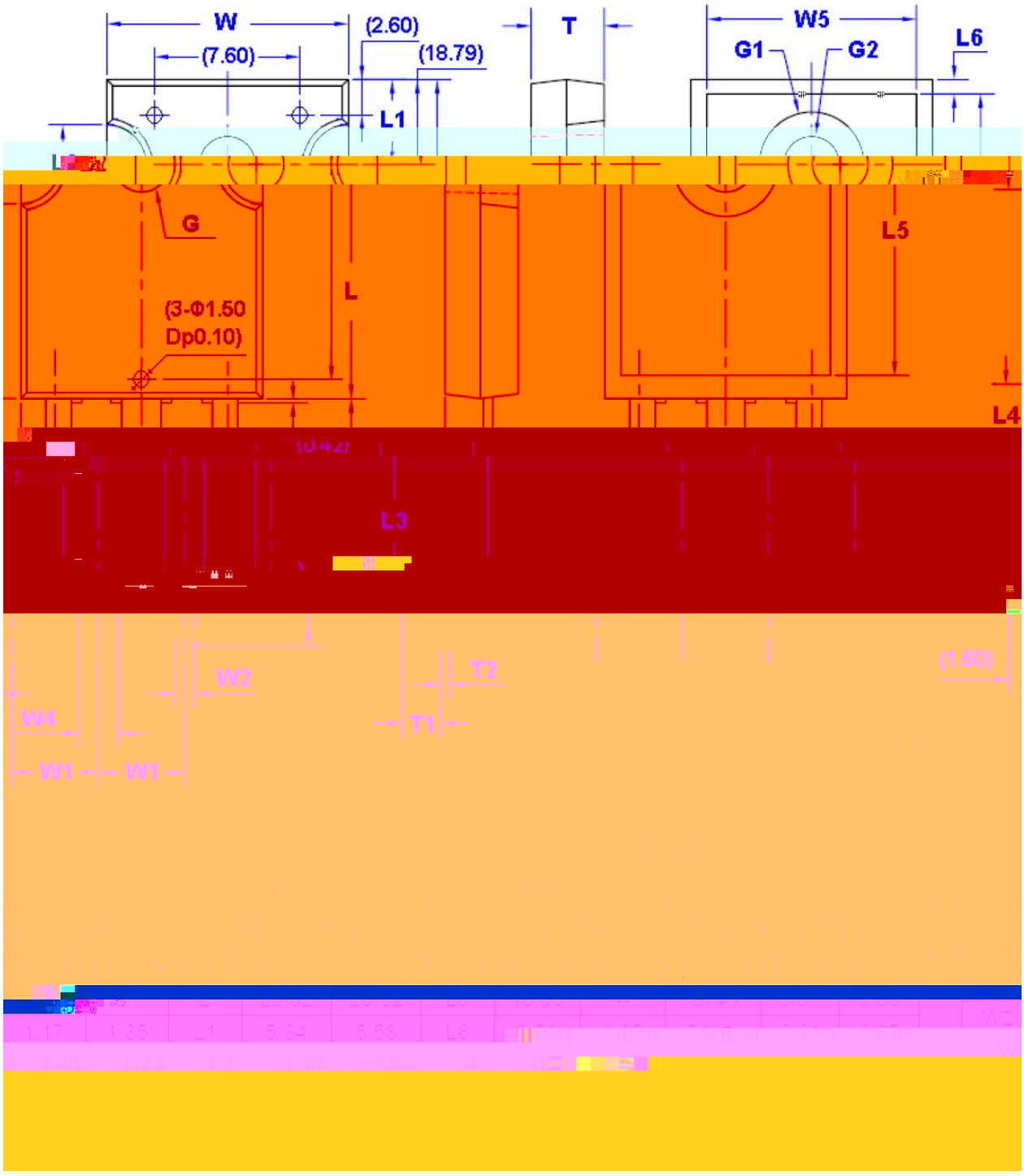


18.Stored Charge

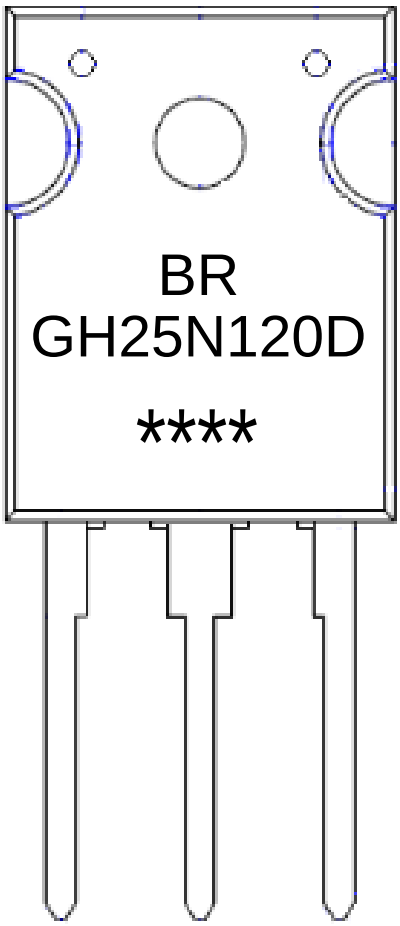


19.Reverse Recovery Time

/ Package Dimensions



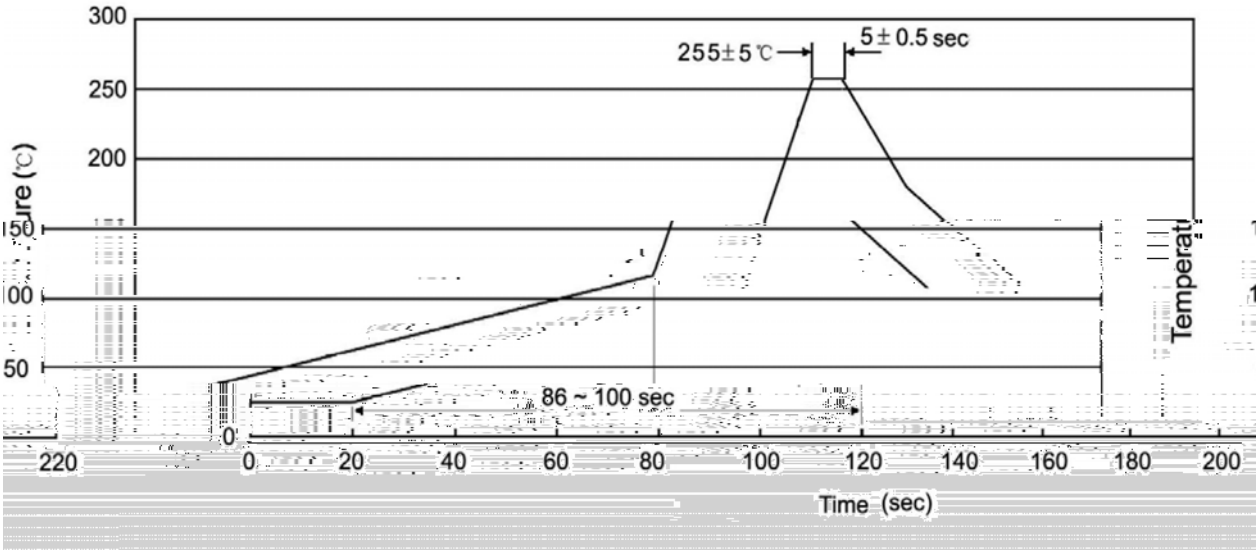
/ Marking Instructions



Note:

BR:	Company Code.
G25N120D:	Product Type.
****:	Lot No. Code, code change with Lot No.

( ) / Temperature Profile for Dip Soldering(Pb-Free)



		Note:
1	25 150 60 90sec;	1.Preheating:25~150 , Time:60~90sec.
2	255 5 5 0.5sec;	2.Peak Temp.:255 5 , Duration:5 0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270 5	10 1 sec.	Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ TUBE

Package Type	Units					Dimension		(unit mm^3)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box