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: 5 .> / / x ˝ Ûı E â‡ } o Insulated-Gate Bipolar Transistor in a TO-247 Plastic Package.

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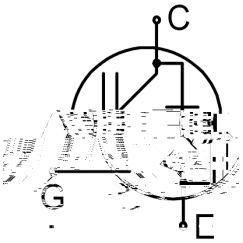
Low gate charge,, Low saturation voltage ,Positive temperature coefficient, RoHS product.

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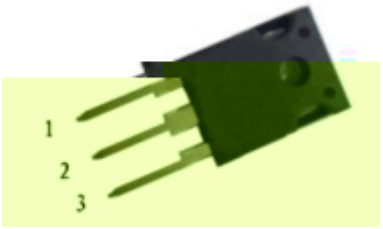
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General purpose inverter, Frequency converters, Induction Heating(IH), Uninterrupted Power Supply(UPS).

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PIN1 y Gate PIN 2 y Collector PIN 3 y Emitter

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- ~ “ ¢o See Marking Instructions.

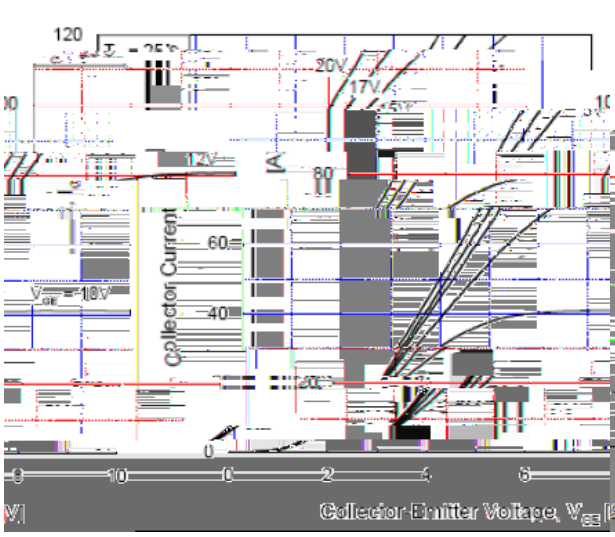
@ Parameter	Z Symbol	 Rating	% y Unit
Collector-emitter voltage	V_{CES}	1200	V
Gate-emitter voltage	V_{GES}	±20	V
Short circuit withstand time	T_{SC}	10	- s
Collector current	I_C	30	A
Collector current@T_C=100		15	A
Collector peak current, T_P limited by T_{JMAX}	I_{CM}	45	A
Diode forward current@T_C=100	I_F	15	A
Diode maximum forward current	I_{FM}	45	A
Power dissipation(T_C=25)	P_D	150	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	$R_{th(j-c)}$	0.63	/W

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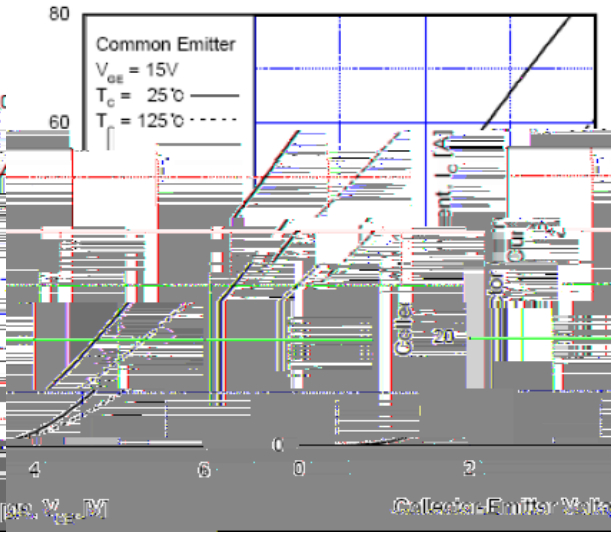
@ Parameter	Z Symbol	y ¡ Ú^ Test Conditions	´ 4 Min	` ” Typ	´ Ý Max	% y Unit
Collector-emitter breakdown voltage	V_{CES}	V_{GE}=0V; I_{CE}=500uA	1200	-	-	V
Breakdown Voltage Temperature Coefficient	¸ BV_{CES}/ ¸ T_J	I_{CE}=1mA;reference to 25		0.6		V/
Zero gate voltage Collector current	I_{CES}	V_{GE}=0V;V_{CE}=1200V Tc=25	-	-	0.2	mA
		Tc=100			2	mA
		Tc=150			2.5	mA
Gate-body leakage current	I_{GES}	V_{GE}=±20V;V_{CE}=0V	-	-	±100	nA
Gate threshold voltage	$V_{GE(th)}$	I_C=600 - A;V_{CE}=V_{GE}	4.5		6.5	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=15A; V_{GE}=15V Tc=25	-	2	2.5	V
		Tc=100		2.2		V
		Tc=150		2.3		V
Forward Transconductance	g_{fs}	V_{CE}=20V;I_C=15A		10		S
Short Collector current	$I_{C(SC)}$	V_{GE}=15V;V_{CE}=600V; tsc Ø10 - s Tc=25		90		A
Input capacitance	C_{ies}	V_{CE}=25V,V_{GE}=0V,f=1MHz	-	1330	2000	pF
Output capacitance	C_{oes}		-	128	200	
Reverse transfer capacitance	C_{res}		-	88	140	

@ Parameter	Z Symbol	y ¡ Ú^ Test Conditions	´ 4 Min	` ” Typ	´ Ý Max	% y Unit
Turn-on delay time	$t_{d(ON)}$	V_{CE}=600V I_C=15A R_G=56 Tc=25	-	70	-	ns
Rise time	t_r		-	150	-	
Turn-off delay time	$t_{d(OFF)}$		-	300	-	
Fall time	t_f		-	80	-	
Turn-On Switching Loss	E_{on}		-	2.3	-	mJ
Turn-Off Switching Loss	E_{off}		-	1.3	-	
Total Switching Loss	E_{ts}		-	3.6	-	
Total gate charge	Q_G	V_{CE}=600V I_C=15A V_{GE}=15V	-	130	180	nC
Gate-emitter charge	Q_{G-E}		-	15	22	
Gate-collector charge	Q_{G-C}		-	50	65	
Diode forward voltage	Vrr55.62 513Ŧj/.1314 /					

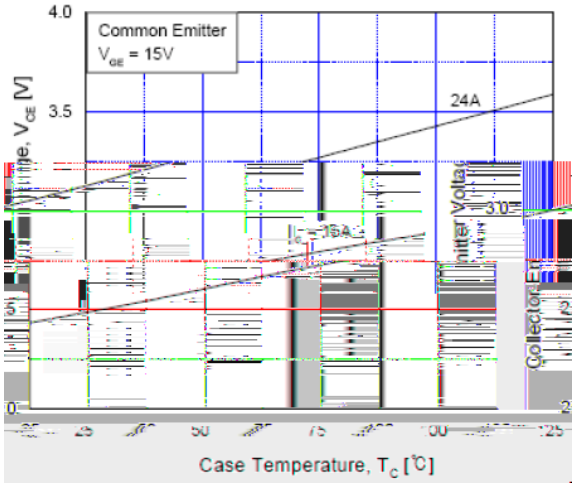
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1.Typical Output Characteristics



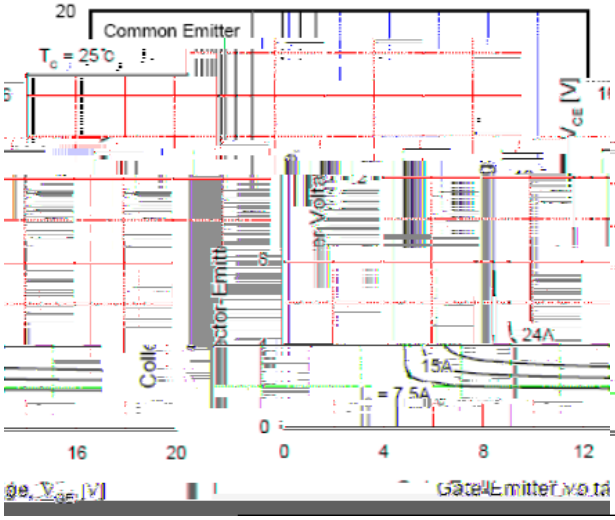
2.Typical Saturation Voltage Characteristics



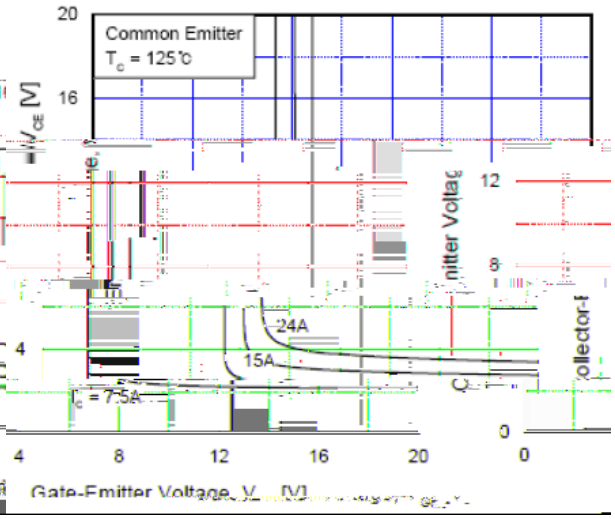
3.Saturation Voltage vs. Case Temperature at Variant Current Level



4.Load Current vs. Frequency

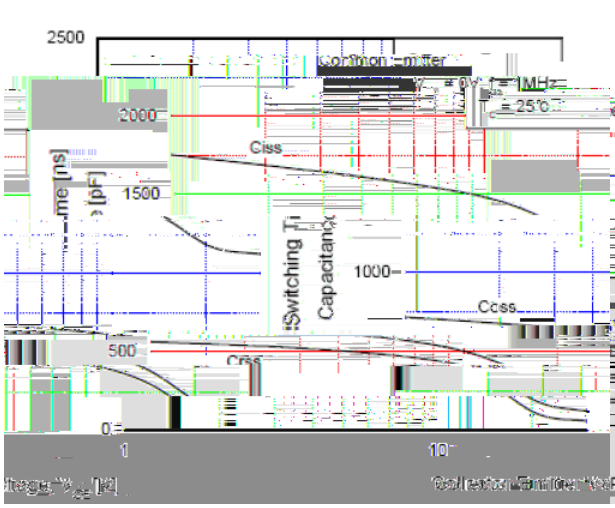


5.Saturation Voltage vs. VGE

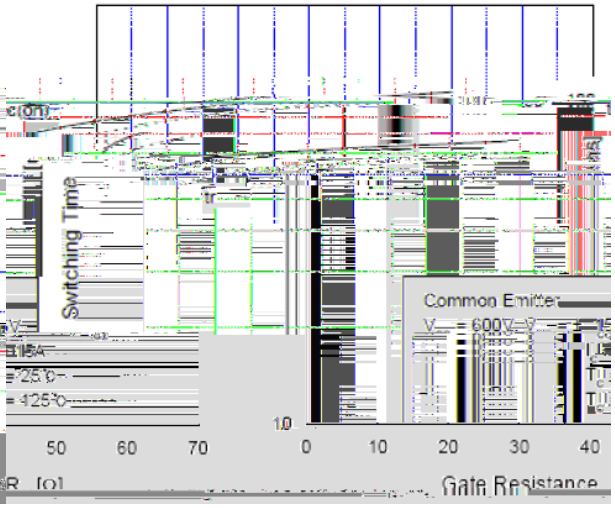


6.Saturation Voltage vs. VGE

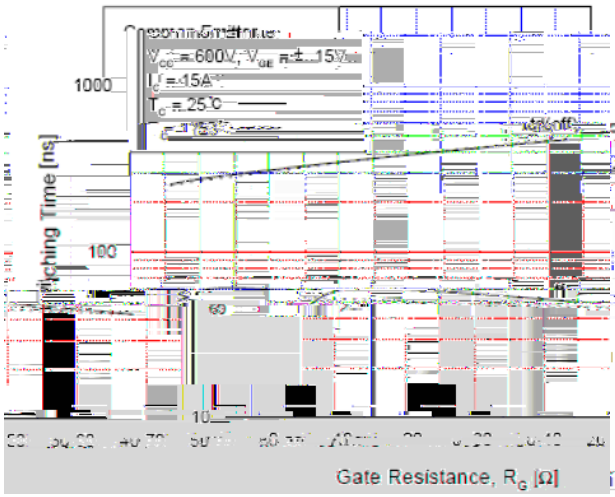
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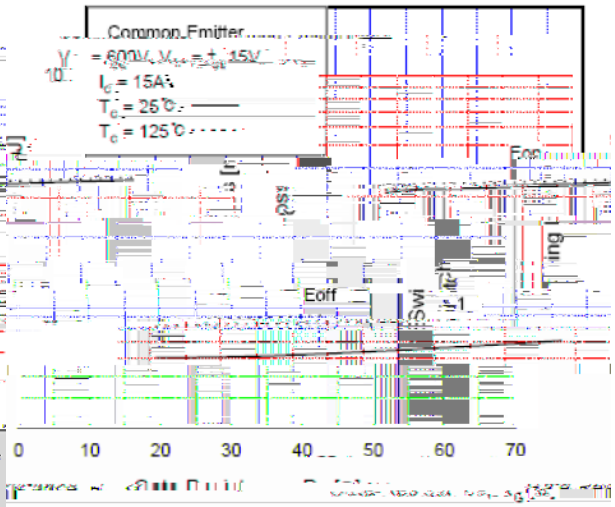
7.Capacitance Characteristics



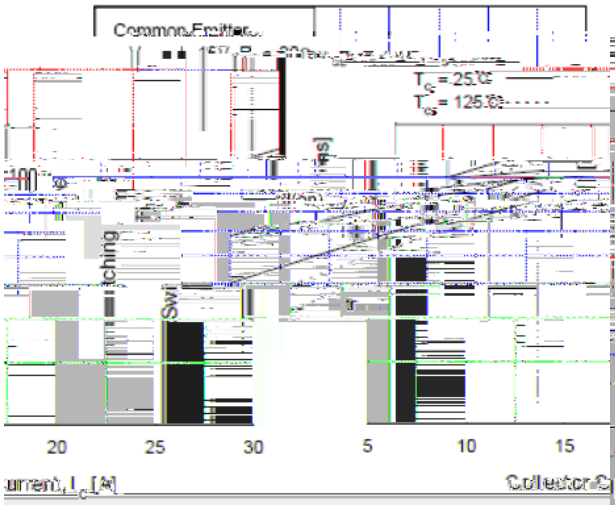
8.Turn-On Characteristics vs. Gate Resistance



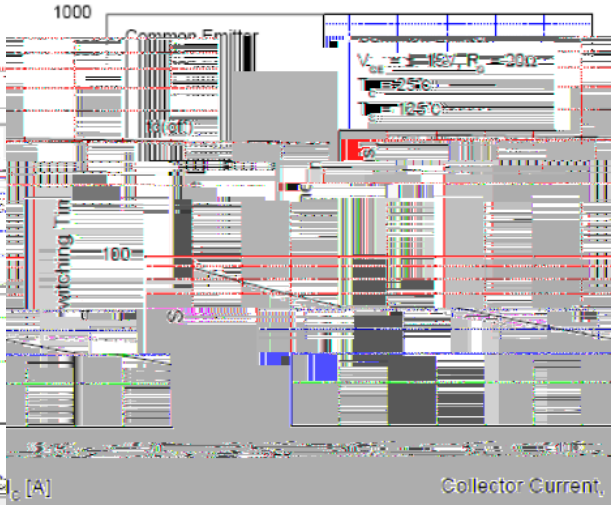
9.Turn-Off Characteristics vs.Gate Resistance



10.Switching Loss vs. Gate Resistance

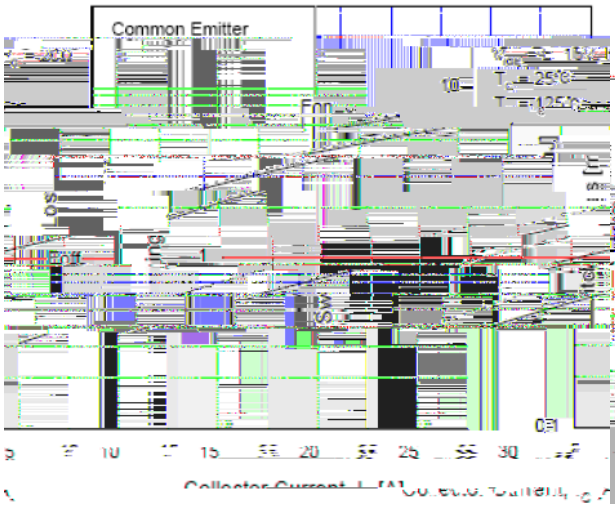


11.Turn-On Characteristics vs. Collector Current

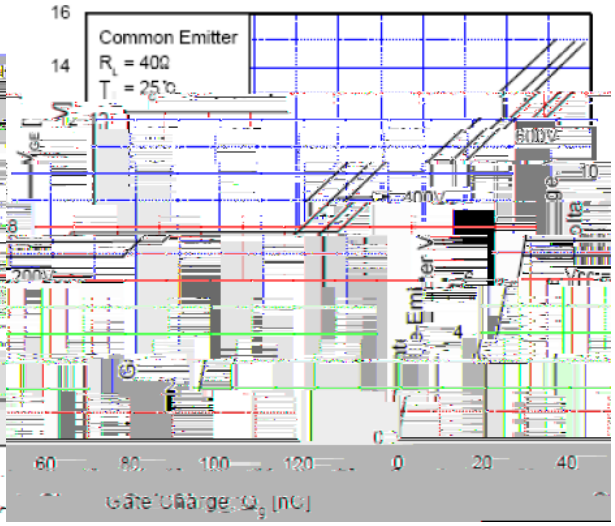


12.Turn-Off Characteristics vs. Collector Current

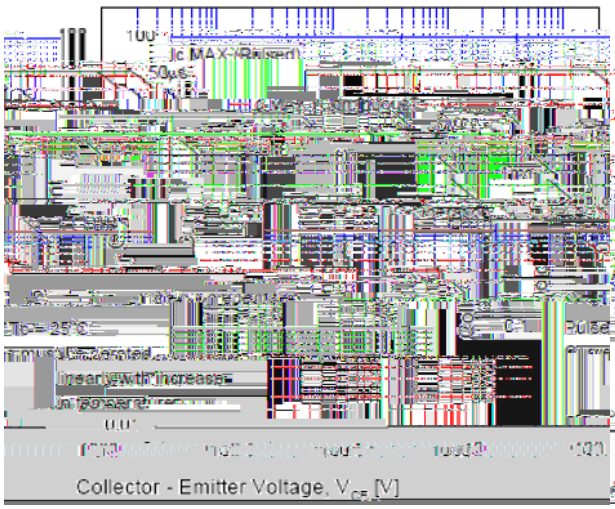
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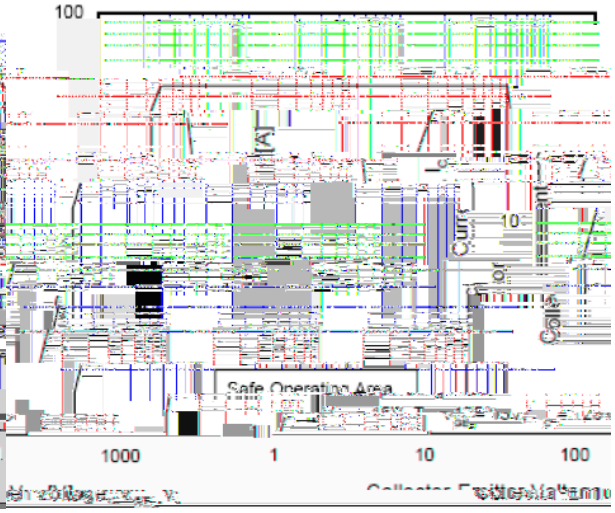
13.Switching Loss vs. Collector Current



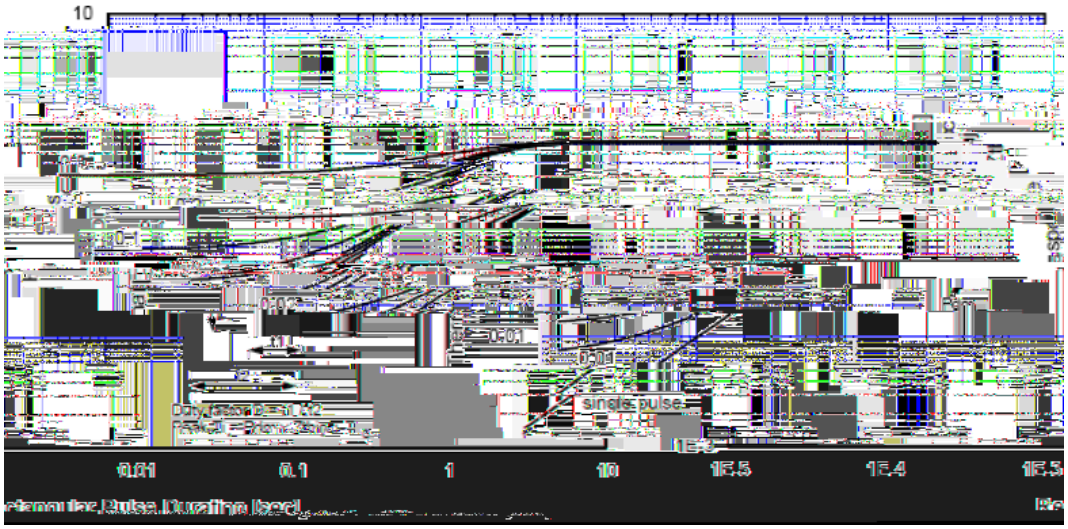
14.Gate Charge Characteristics



15.SOA Characteristics

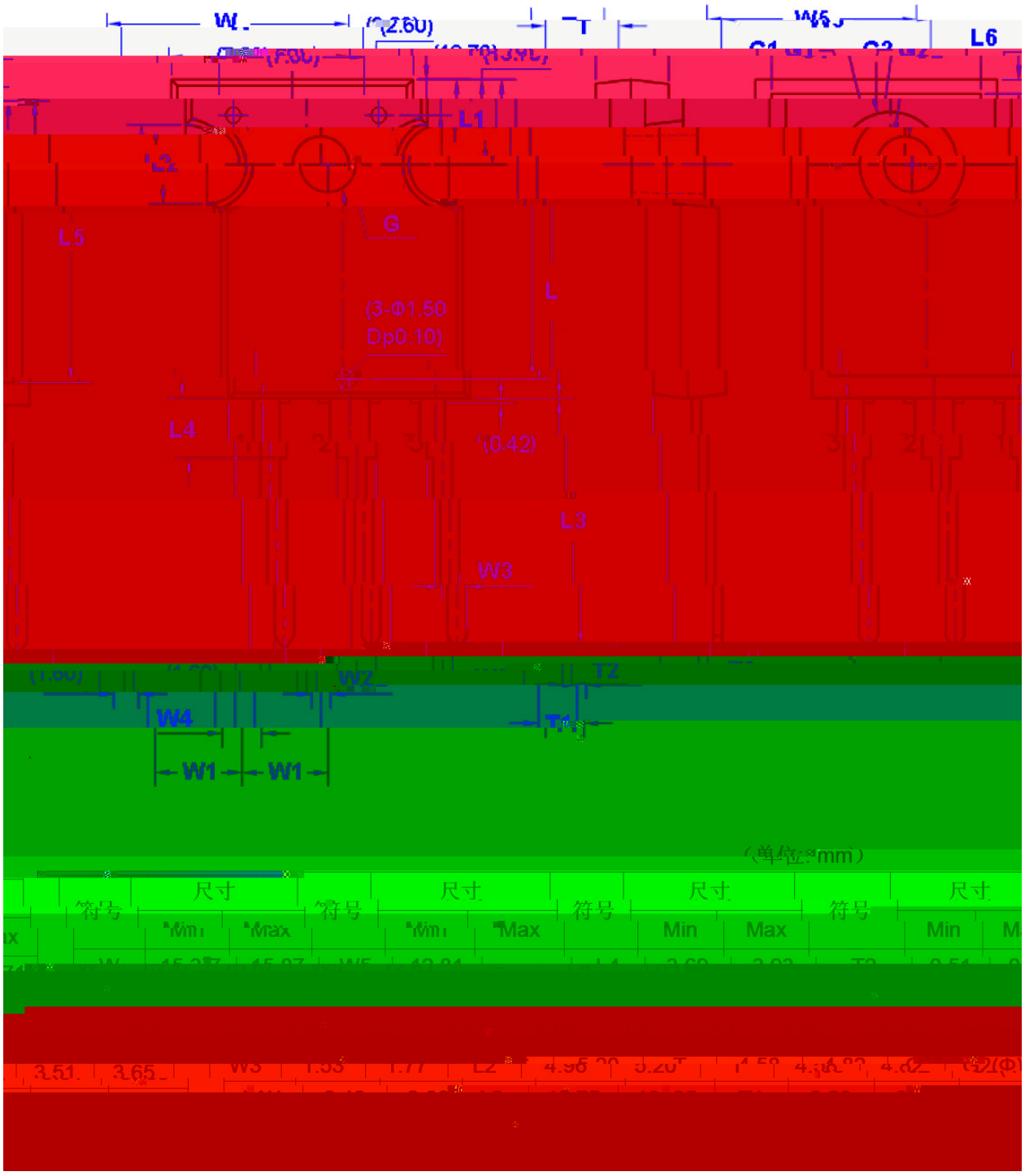


16.Turn-Off SOA

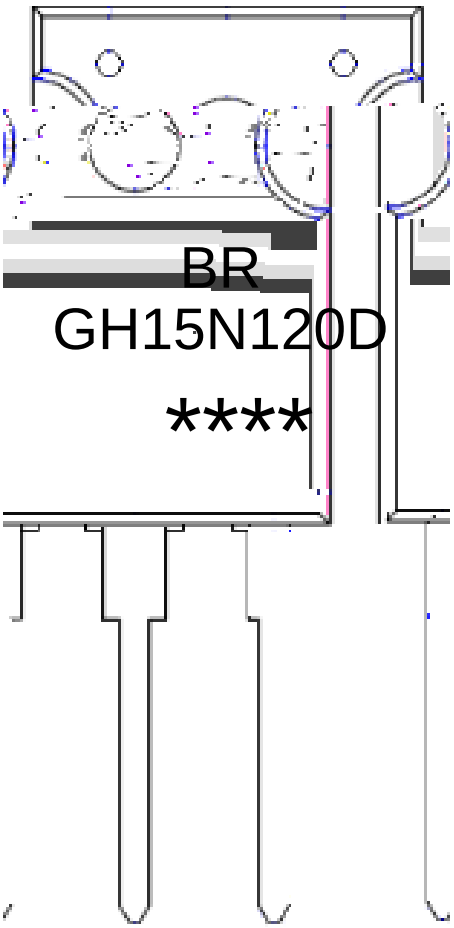


17.Transient Thermal Impedance

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L6
L1
L2
L5
G
L
(3-Φ1.50
Dp0.10)
L4
(0.42)
L3
W3
W2
T2
W4
T1
W1
W1
(单位:mm)
尺寸
尺寸
尺寸
尺寸
符号
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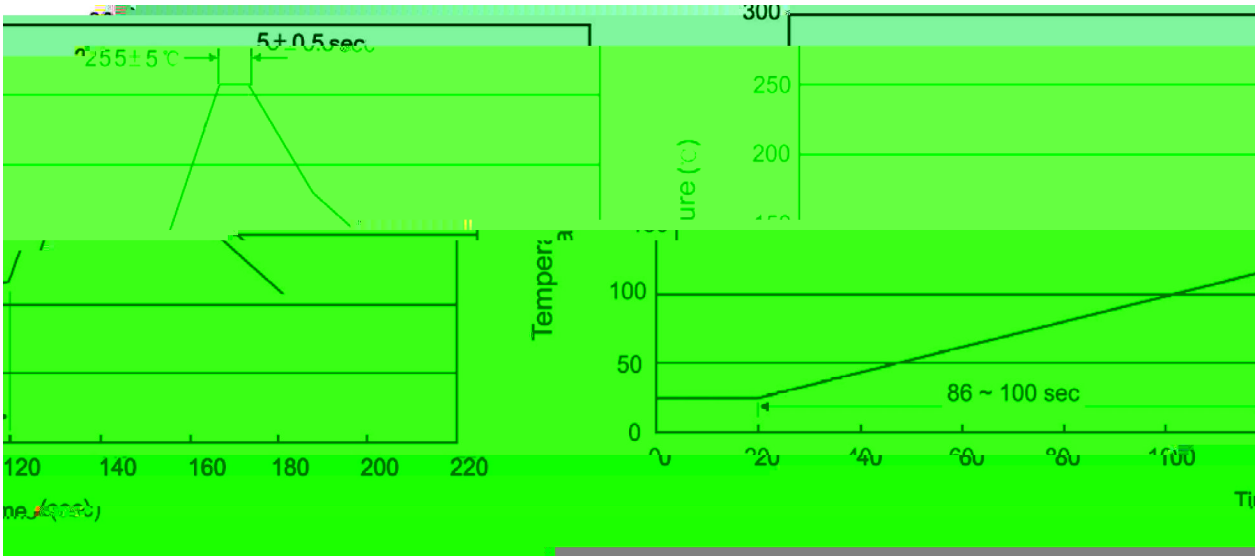
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Note:

BR:	Company Code.
G15N120D:	Product Type.
****:	Lot No. Code, code change with Lot No.

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“ ¢ y	Note:
1o ˜ ‰ 25 ‰ 150 - k 60 ‰ 90sec;	1.Preheating:25~150 - , Time:60~90sec.
2o Q 255 r 5 - k 4 Ò 5 r 0.5sec;	2.Peak Temp.:255 r 5 - , Duration:5 r 0.5sec.
3o D N òi Ò0 , 2 ‰ 10 - /sec.	3. Cooling Speed: 2~10 - /sec.

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y 270 r 5 - y 10 r 1 sec. Temp.:270±5 Time:10±1 sec

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Package Type ßm ø ·	Units g m ôh					Dimension g m d ° (unit ! mm^3)		
	Units/Tube /	Tubes/Inner Box / ç	Units/Inner Box / ç	Inner Boxes/Outer Box ç / –	Units/Outer Box / –	Tube	Inner Box ç	Outer Box –
TO-247	30	15	450	5	2250	497.5×46×8	555×164×50	575×290×180

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