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Insulated-Gate Bipolar Transistor in a TO-3P Plastic Package.

Built in fast recovery diode, Saturation voltage positive temperature coefficient, High reliability and thermal stability parameters, good agreement, RoHS product.

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	600	V
Gate-emitter voltage	V_{GES}	±20	V
Collector current@T_C=25	I_C	120	A
Collector current@T_C=100		60	A
Collector peak current, T_P limited by T_{JMAX}	I_{CM}	180	A
Diode forward current@T_C=100	I_F	30	A
Diode maximum forward current	I_{FM}	60	A
Power dissipation(T_C=25)	P_D	310	W
Power dissipation(T_c=100)		125	W
Operating junction and storage temperature range	T_J, T_{stg}	-55 155	
Maximum temperature for soldering	T_L	260	
IGBT thermal resistance,junction-case	$R_{th(j-c)}$	0.4	/W
Diode thermal resistance,junction-case	$R_{th(j-c)}$	1.2	/W
Thermal resistance,junction-ambient	$R_{th(j-a)}$	40	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	V_{CES}	V_{GE}=0V I_{CE}=1.0mA	610	-	-	V
Zero gate voltage Collector current	I_{CES}	V_{GE}=0V V_{CE}=650V	-	-	4	uA
Gate-body leakage current	I_{GES}	V_{GE}=±20V V_{CE}=0V	-	-	±100	nA
Gate threshold voltage	$V_{GE(th)}$	I_C=0.8mA V_{CE}=V_{GE}	4	5.0	6	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=60A V_{GE}=15V	-	2.1	2.9	V
Input capacitance	C_{ies}	V_{CE}=25V V_{GE}=0V f=1MHz	-	5150	-	pF
Output capacitance	C_{oes}		-	300	-	
Reverse transfer capacitance	C_{res}		-	65	-	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input capacitance	C_{ies}	V_{CE}=25V V_{GE}=0V f=1MHz	-	5150	-	pF
Output capacitance	C_{oes}		-	300	-	
Reverse transfer capacitance	C_{res}		-	65	-	
Turn-on delay time	$t_{d(ON)}$	V_{CE}=400V I_C=60A, R_G=3Ω VGE=0/15V Inductive Load	-	35	-	ns
Rise time	t_r		-	35	-	
Turn-off delay time	$t_{d(OFF)}$		-	107	-	
Fall time	t_f		-	36	-	
Turn-On Switching Loss	E_{on}		-	2.05		mJ
Turn-Off Switching Loss	E_{off}		-	1.11		
Total Switching Loss	E_{ts}		-	3.16		
Total gate charge	Q_G	V_{CE}=480V I_C=60A V_{GE}=15V	-	135	-	nC
Diode forward voltage	V_F	I_F=60A	-	1.5		V
Reverse recovery time	Trr	VR=400V I_F=30A di/dt=500A/μS	-	60		ns
Diode Peak Reverse Recovery Current	Irr		-	12		A
Reverse recovery charge	Qrr		-	0.4		uC

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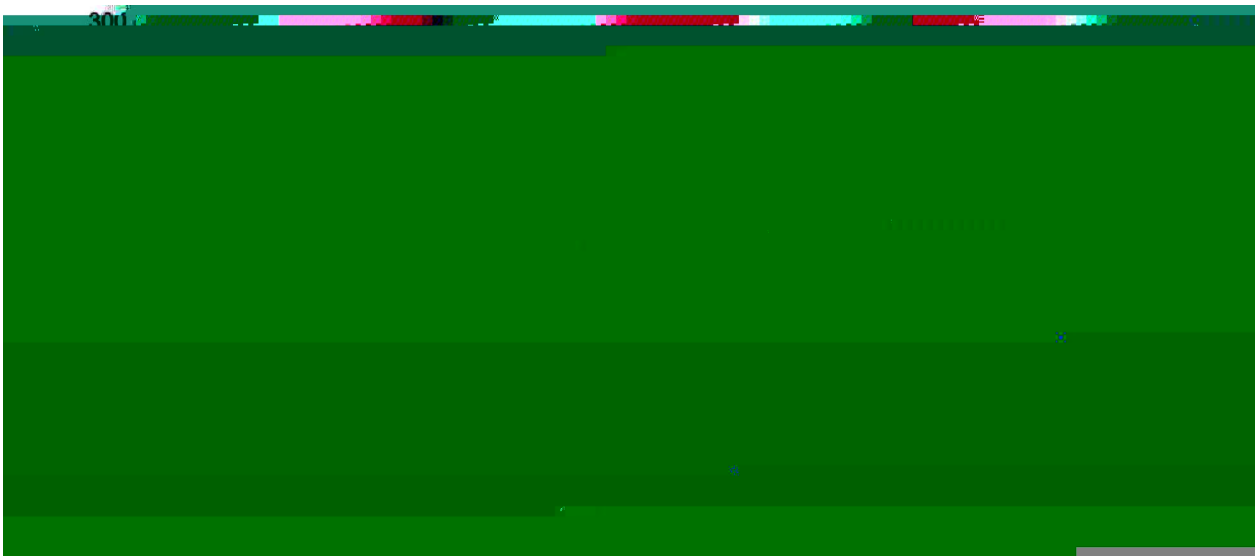
Note:

BR:	Company Code.
G60N60D:	Product Type.
****:	Lot No. Code, code change with Lot No.



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.

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

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-3P	30	15	450	5	2250	497.5×46×8	555×164×50	575×290×180