

BRG60N65D
Rev.D Oct.-2015

TO-3P

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

, RoHS

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	650	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}				

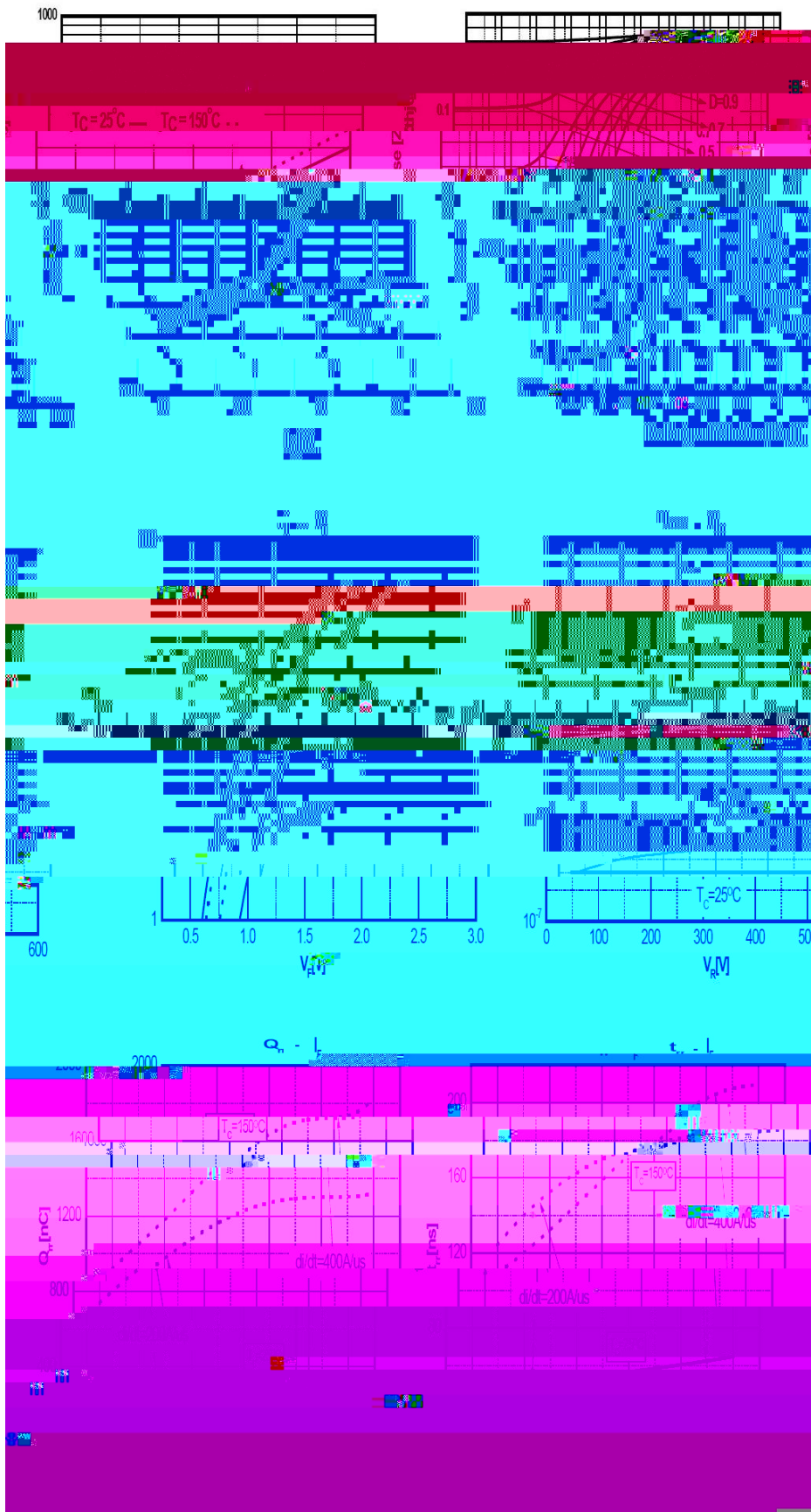
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input capacitance	C_{ies}	$V_{CE}=25V$ $V_{GE}=0V$ $f=1MHz$	-	5150	-	pF
Output capacitance	C_{oes}		-	300	-	
Reverse transfer capacitance	C_{res}		-	65	-	
Turn-on delay time	$t_{d(ON)}$	$V_{CE}=400V$ $I_C=60A,$ $R_G=3$ $V_{GE}=0/15V$ Inductive Load	-	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	$I_F=60A$	-	2.54		V
Reverse recovery time	T_{rr}	$V_R=400V$ $I_F=30A$ $di/dt=500A/S$	-	60		ns
Diode Peak Reverse Recovery Current	I_{rr}		-	12		A
Reverse recovery charge	Q_{rr}		-	0.4		uC

/ **Electrical Characteristic Curve**

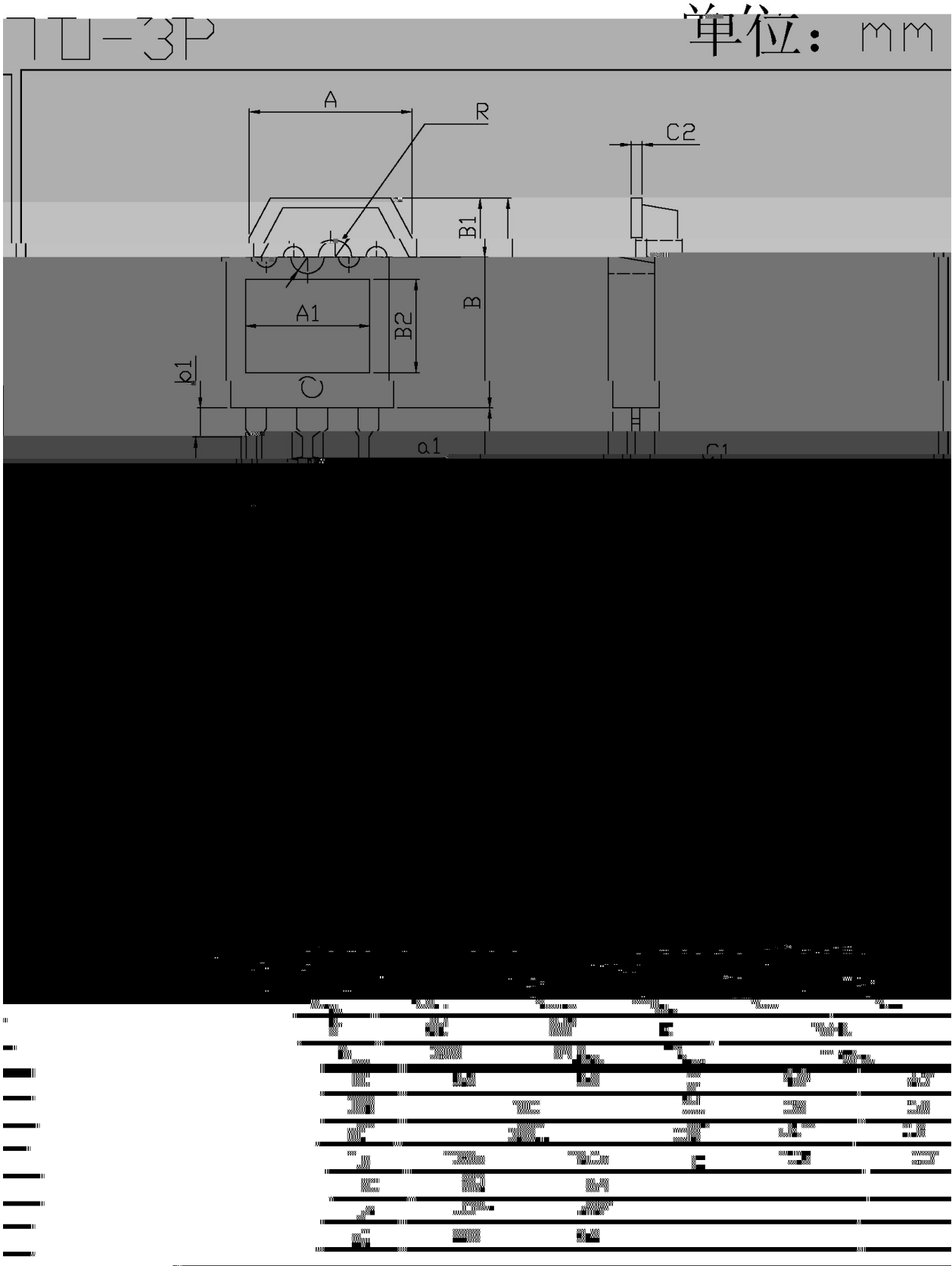
/ Electrical Characteristic Curve



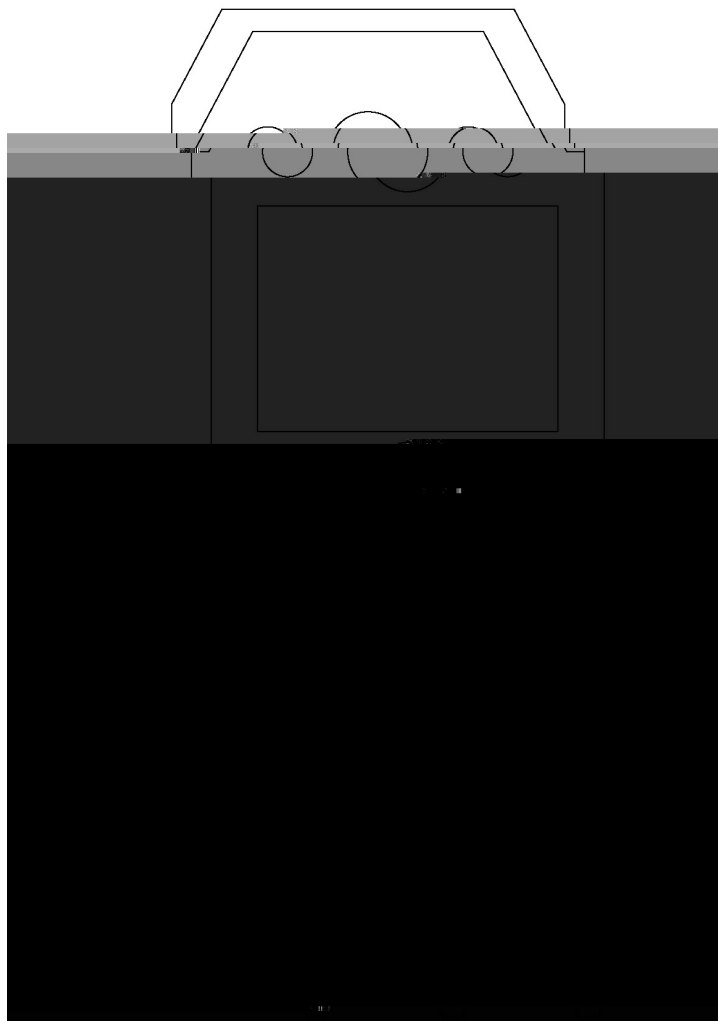
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR:

G60N65D

Note:

BR: Company Code.

G60N65D: Product Type.

****: Lot No. Code, code change with Lot No.

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