

/ Descriptions

TO-247

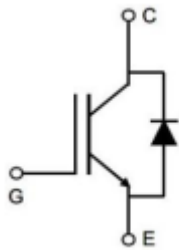
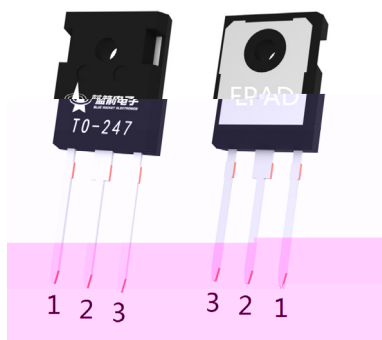
Insulated-Gate Bipolar Transistor in a TO-247 Plastic Package.

/ Features

650V 100A

 $V_{CE(SAT)} = 1.60V(\text{typ.}) @ V_{GE} = 15V, I_C = 100A$ **/ Applications**

Solar Converters, Uninterrupted Power Supply, Welding Converters, Mid to High Range Switching Frequency Converters.

/ Equivalent Circuit**/ Pinning**

PIN1 G PIN 2 EPAD C PIN 3 E

/ Marking

See Marking Instructions.

BRPGB100N65AHA

Rev.A Mar.-2026

DATA SHEET

Parameter		Symbol	Rating	Unit
Collector-Emitter Voltage		V_{CES}	650	V
Gate-Emitter Voltage		V_{GES}	± 30	V
Continuous Collector Current	$T_C=25$	I_C	200	A
	$T_C=100$		100	A
Pulsed Collector Current , Limited by T_{Jmax}		I_{CM}	400	A
Continuous Diode Forward Current	$T_C=25$	I_F	150	A
	$T_C=100$		75	A
Power Dissipation	$T_C=25$	P_D	536	W
Operating Junction Temperature Range		T_J	-40 to +175	
Storage Temperature Range		T_{STG}	-55 to +175	
Maximum Temperature for Soldering		T_L	260	
Maximum Junction-to-Ambient		$R_{\theta JA}$	40	/W
Maximum IGBT Junction-to-Case		$R_{\theta JC}$	0.26	/W
Maximum Diode Junction-to-Case		$R_{\theta JC}$	1.26	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C=1.0mA$, $V_{GE}=0V$	650			V
Zero Gate Voltage Collector current	I_{CES}	$V_{CE}=650V$, $V_{GE}=0V$			10	μA
Gate-Emitter Leakage Current	I_{GES}	$V_{CE}=0V$, $V_{GE}=\pm 20V$			± 200	nA
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE}=V_{GE}$, $I_C=1.0mA$	4.3	5.3	6.3	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$V_{GE}=15V$, $I_C=100A$	$T_J=25$	1.60	1.95	V
			$T_J=125$	1.87		
			$T_J=175$	2.04		

Total Gate Charge

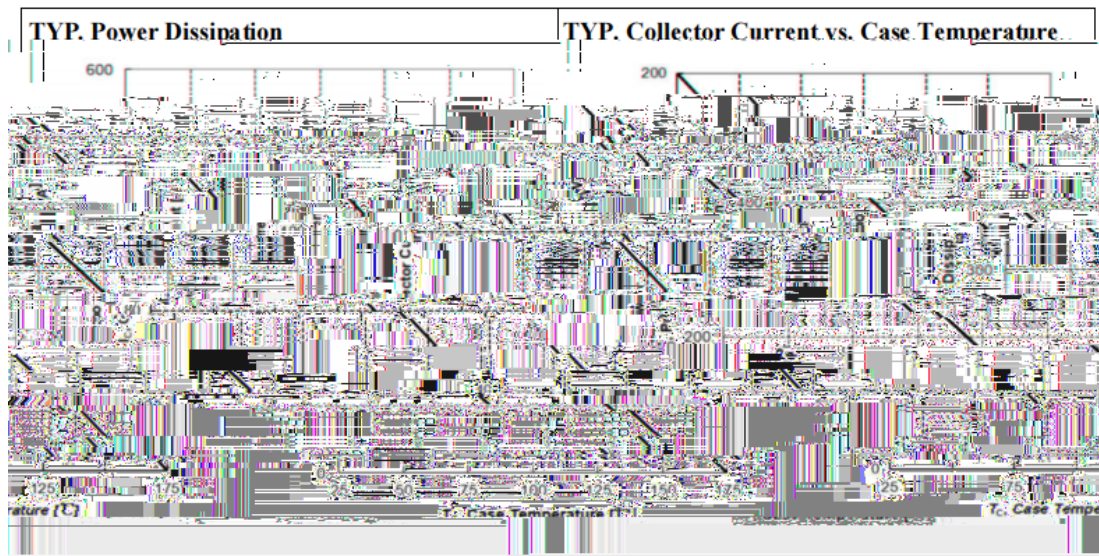
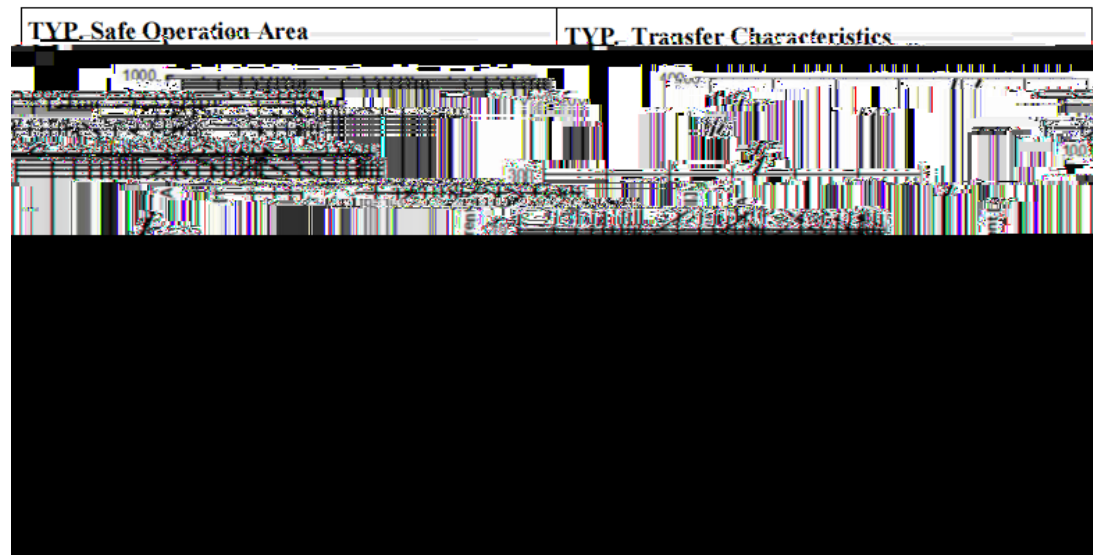
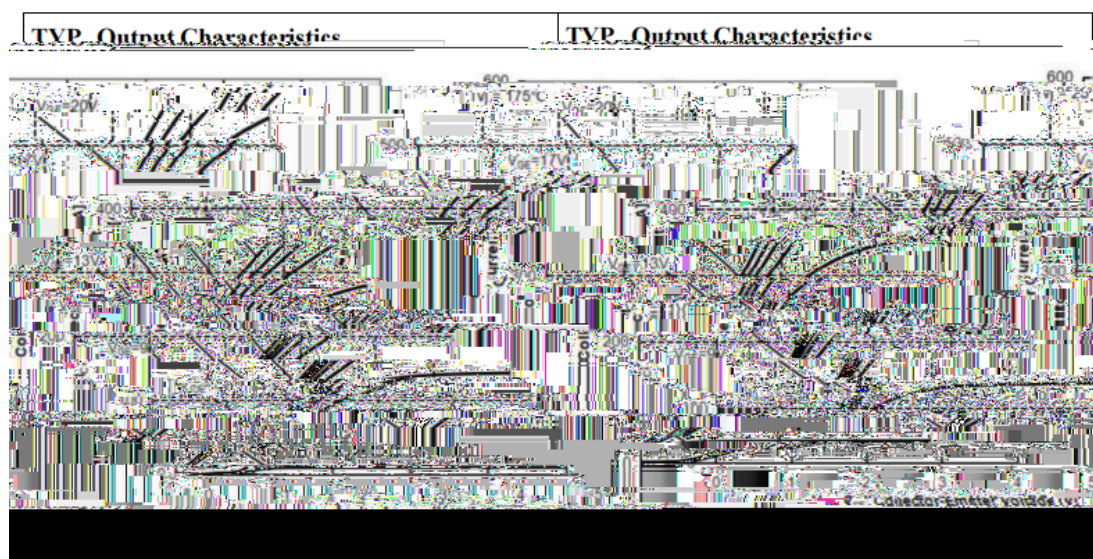
 Q_g
 $V_{GE}=15V$, $V_{CC}=520V$
 $I_C=100A$

GETotal

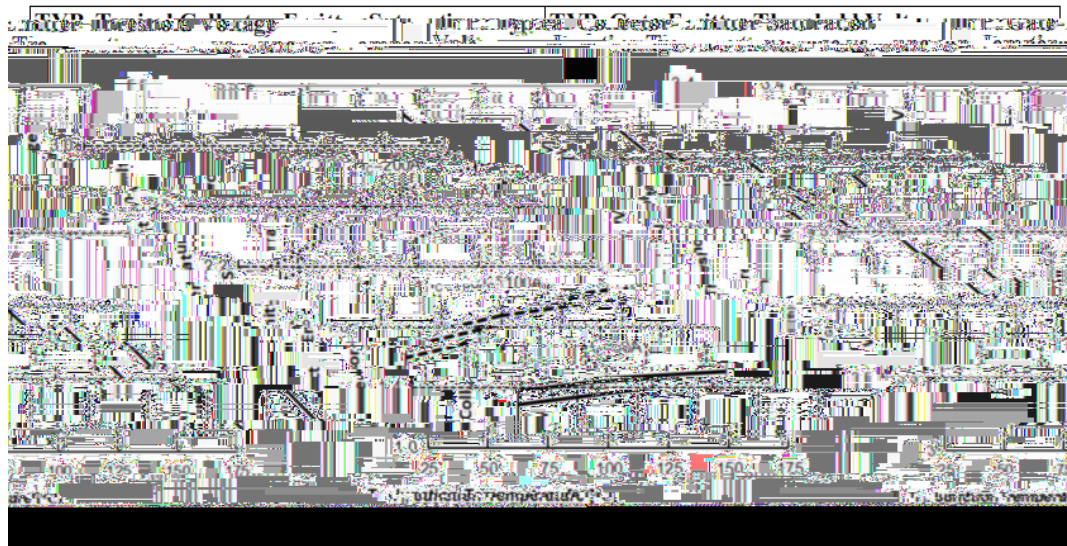
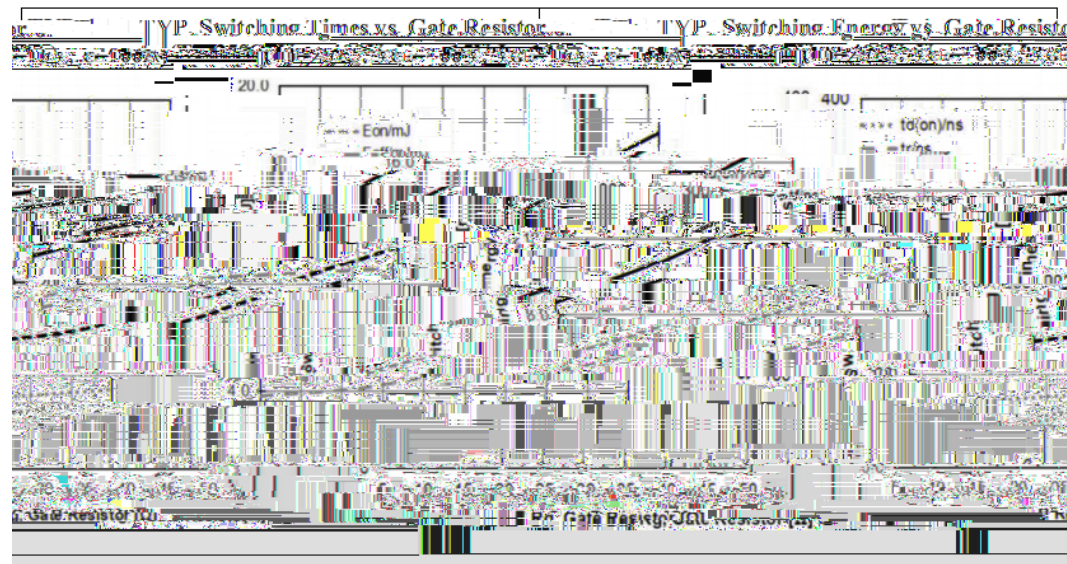
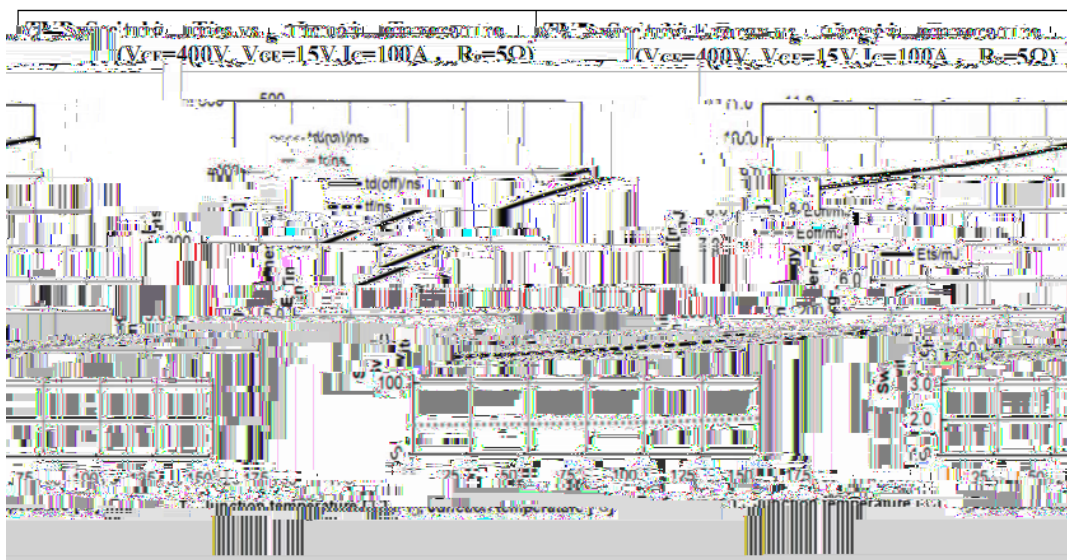
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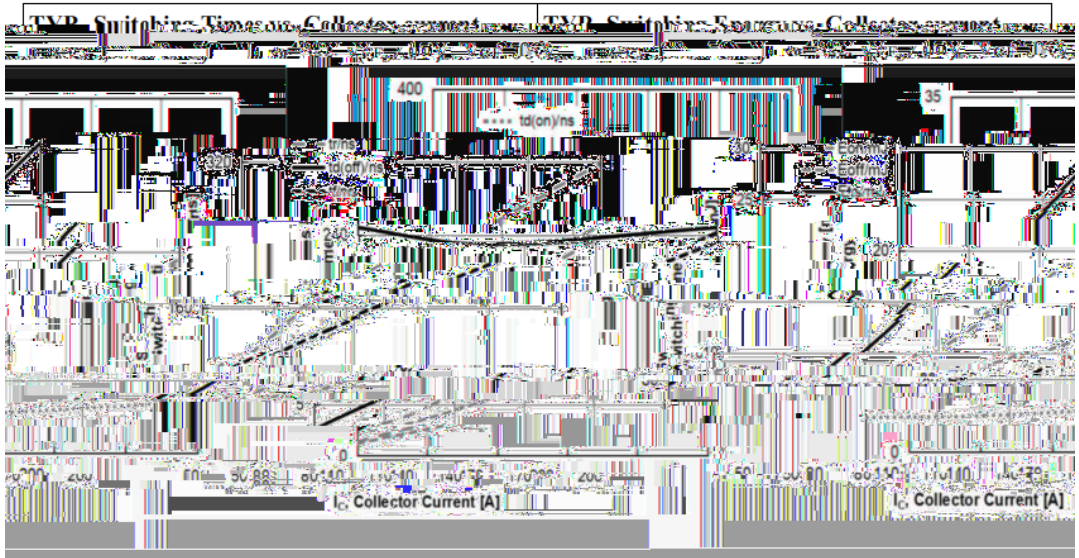
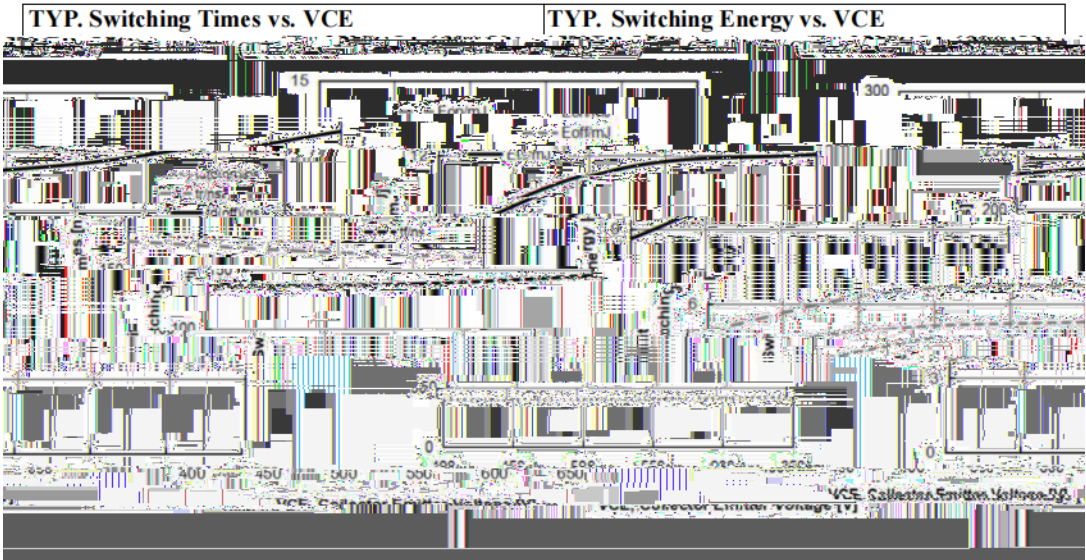
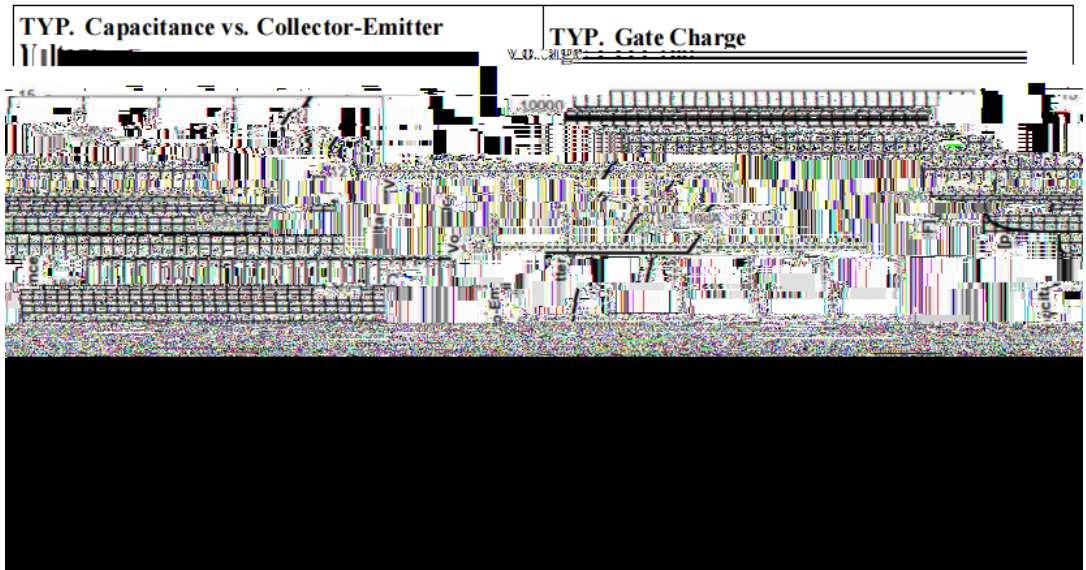
/ Electrical Characteristic Curve



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

- Note:

1

25 150

60 90sec;

2

255±5

5±0.5sec;

3

2 10 /sec.
- 1.Preheating:25~150 , Time:60~90sec.

2.Peak Temp.:255±5 , Duration:5±0.5sec.

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
TO-247	30	15	450	5	2250	520×44×6	580×158×55	595×300×178