Features

- High Speed Smooth Switching Device for Hard and Soft Switching
- $V_{ce(sat)}$ with Positive Temperature Coefficient
- High Ruggedness, Good Thermal Stability
- Very Tight Parameter Distribution
- Halogen Free. “Green” Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Trench and Field Stop IGBT 650V 75A

Maximum Ratings

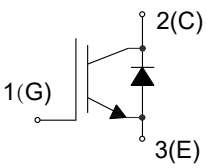
- Operating Junction Temperature Range : -40°C to +175°C
- Storage Temperature Range: -55°C to +150°C
- IGBT Thermal Resistance: 0.38°C/W Junction to Case
- Diode Thermal Resistance: 0.45°C/W Junction to Case
- Thermal Resistance: 40°C/W Junction to Ambient

Parameter		Symbol	Rating	Unit
Collector-Emitter Voltage		V_{CE}	650	V
DC Collector Current(2)	T_C=25°C	I_C	75	A
	T_C=100°C		75	
Pulsed Collector Current (3)		$I_{C,pluse}$	300	A
Diode Forward Current (2)	T_C=25°C	I_F	75	A
	T_C=100°C		75	
Diode Pulsed Current (3)		$I_{F,pluse}$	300	A
Gate-Emitter Voltage		V_{GE}	±20	V
Transient Gate-Emitter Voltage(4)			±30	
Short Circuit Withstand Time (5) V_{GE}=15V, V_{CC}=600V, T_J≤150°C		t_{SC}	5	μs
Power Dissipation	T_C=25°C	P_D	395	W
	T_C=100°C		195	

Note:

1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Limited by T_{Jmax}.
3. T_p limited by T_{Jmax}.
4. T_p≤10us, Duty Cycle<1%
5. Allowed number of short circuits: <1000; time between short circuits: >1s.

Internal Structure



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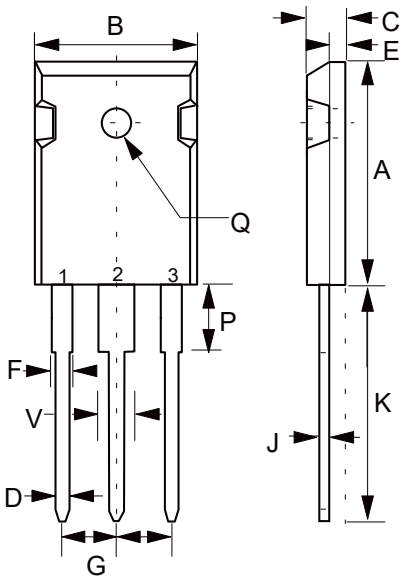


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.787	0.866	20.00	22.00	
B	0.598	0.638	15.20	16.20	
C	0.185	0.208	4.70	5.30	
D	0.035	0.059	0.90	1.50	
E	0.059	0.094	1.50	2.40	
F	0.067	0.091	1.70	2.30	
J	0.019	0.031	0.48	0.80	
K	0.748	0.833	19.00	21.15	
P	0.122	0.189	3.10	4.80	
Q	0.118	0.150	3.00	3.80	Φ
V	0.106	0.134	2.70	3.40	
G	0.197	0.224	5.00	5.70	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	V_{GE}=0V, I_C=250μA	650			V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V_{GE}=15V, I_C=75A, T_J=25℃		1.65	2.1	V
		V_{GE}=15V, I_C=75A, T_J=125℃		1.85		
		V_{GE}=15V, I_C=75A, T_J=150℃		1.95		
G-E Threshold Voltage	$V_{GE(th)}$	I_C=250μA, V_{CE}=V_{GE}	3.9	5.0	6.1	V
C-E Leakage Current	I_{CES}	V_{CE}=650V, V_{GE}=0V			1	mA
		V_{CE}=650V, V_{GE}=0V, T_J=150℃			5	
G-E Leakage Current	I_{GES}	V_{CE}=0V, V_{GE}=±20V			100	nA
Dynamic Characteristics						
Input Capacitance	C_{ies}	V_{CE}=25V,V_{GE}=0V,f=1MHz		7440		pF
Output Capacitance	C_{oes}			240		
Reverse Transfer Capacitance	C_{res}			135		
Gate Charge	Q_g	V_{CC}=300V,I_C=75A,V_{GE}=15V		130		nC
IGBT Switching Characteristics						
Turn-On Delay Time	$td_{(on)}$	V_{CC}=400V, I_C=75A, V_{GE}=-15/15V, R_G=8Ω,L_S=60nH, T_J=25℃		34		ns
Rise Time	t_r			153		
Turn-Off Delay Time	$td_{(off)}$			183		
Fall Time	t_f			67		
Turn-On Energy	E_{on}			2.64		mJ
Turn-Off Energy	E_{off}			0.92		
Turn-On Delay Time	$td_{(on)}$	V_{CC}=400V, I_C=75A, V_{GE}=-15/15V, R_G=8Ω,L_S=60nH, T_J=125℃		37		ns
Rise Time	t_r			157		
Turn-Off Delay Time	$td_{(off)}$			198		
Fall Time	t_f			68		
Turn-On Energy	E_{on}			4.35		mJ
Turn-Off Energy	E_{off}			1.12		
Turn-On Delay Time	$td_{(on)}$	V_{CC}=400V, I_C=75A, V_{GE}=-15/15V, R_G=8Ω,L_S=60nH, T_J=150℃		40		ns
Rise Time	t_r			163		
Turn-Off Delay Time	$td_{(off)}$			208		
Fall Time	t_f			73		
Turn-On Energy	E_{on}			4.57		mJ
Turn-Off Energy	E_{off}			1.20		

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode Characteristics						
Diode Forward Voltage	V_F	V_{GE}=0V, I_F=75A, T_J=25℃		1.48	2	V
		V_{GE}=0V, I_F=75A, T_J=125℃		1.6		
		V_{GE}=0V, I_F=75A, T_J=150℃		1.6		
Reverse Recovery Current	I_{rr}	V_R=400V, I_F=75A, di_F/dt=-460A/μs, T_J=25℃		17		A
Reverse Recovery Charge	Q_{rr}			2.43		μC
Reverse Recovery Energy	E_{rec}			0.68		mJ
Reverse Recovery Current	I_{rr}	V_R=400V, I_F=75A, di_F/dt=-460A/μs, T_J=125℃		23		A
Reverse Recovery Charge	Q_{rr}			3.37		μC
Reverse Recovery Energy	E_{rec}			0.91		mJ
Reverse Recovery Current	I_{rr}	V_R=400V, I_F=75A, di_F/dt=-460A/μs, T_J=150℃		25		A
Reverse Recovery Charge	Q_{rr}			3.72		μC
Reverse Recovery Energy	E_{rec}			0.99		mJ

Curve Characteristics

Fig. 1 - Typical Output Characteristics
(V_{GE}=15V)

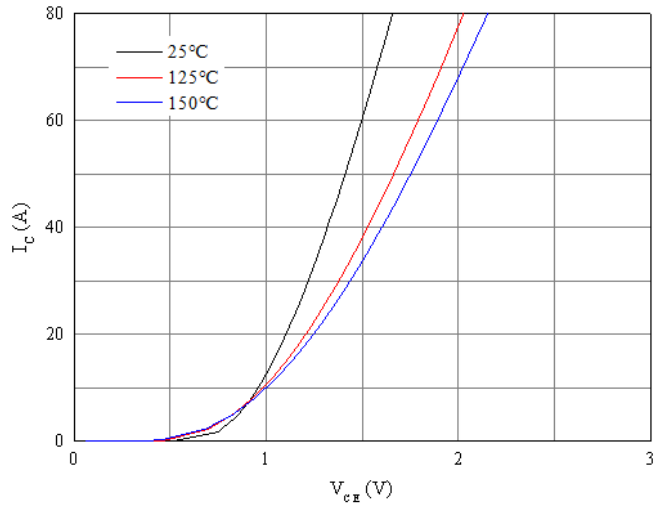


Fig. 2 - Typical Output Characteristics
(T_J=150℃)

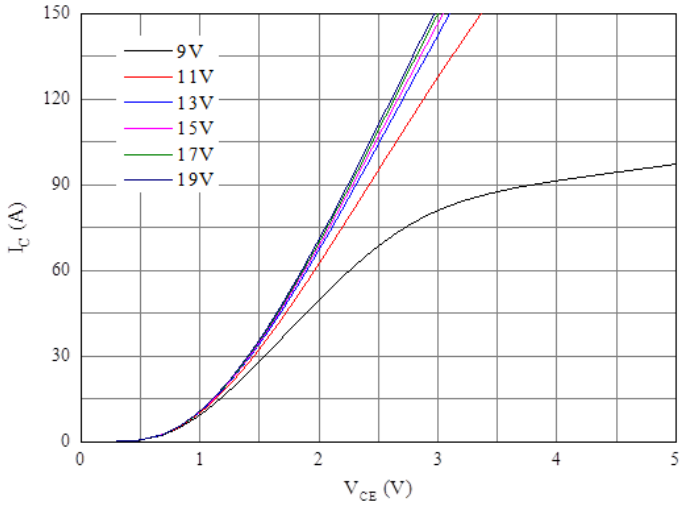


Fig. 3 - Typical transfer Characteristic
(V_{CE}=20V)

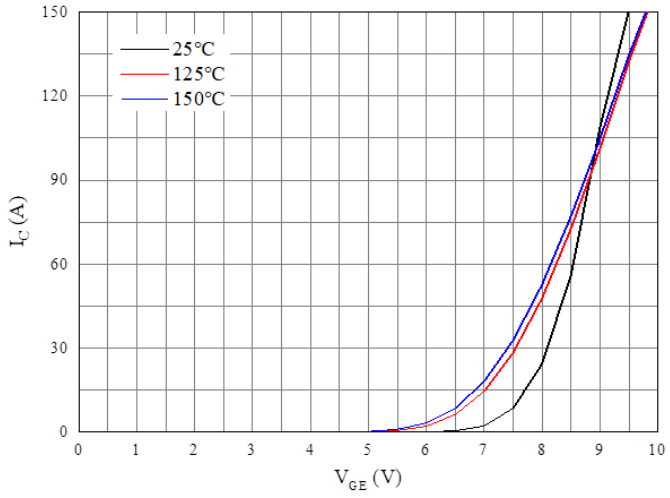


Fig. 4 - Forward Characteristic of Diode

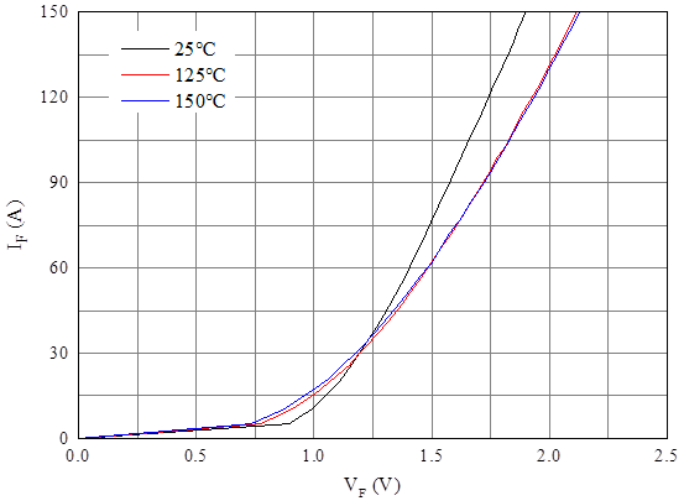


Fig. 5 - Switching Losses of IGBT
(V_{GE}=±15V, R_{Gon}=8Ω, R_{Goff}=8Ω, V_{CE}=400V)

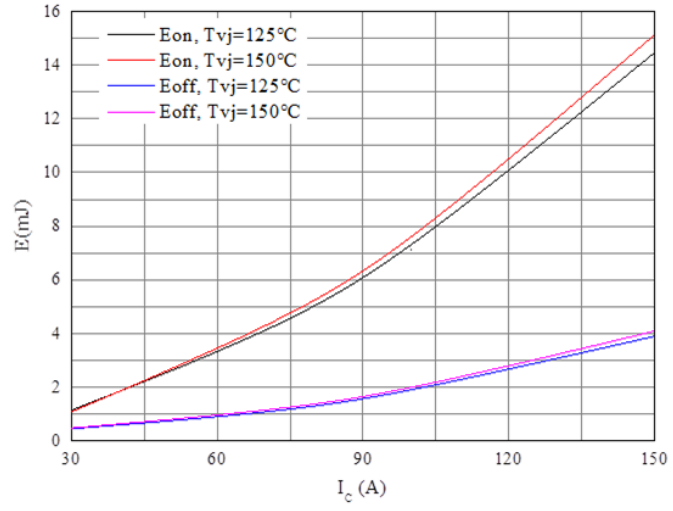
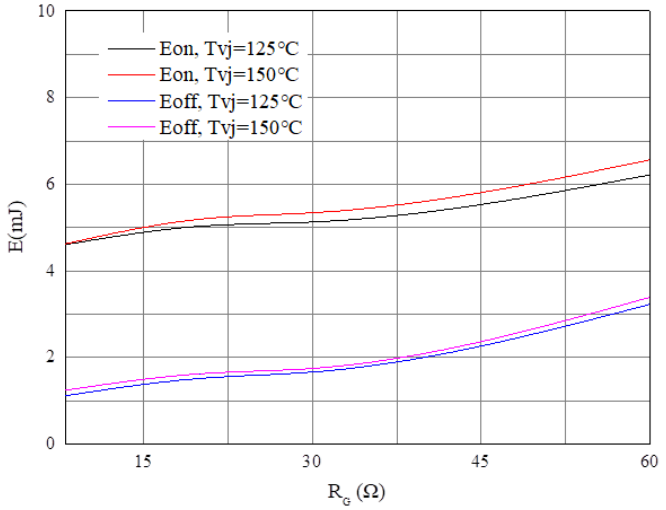


Fig. 6 - Switching Losses of IGBT
(V_{GE}=±15V, I_C=75A, V_{CE}=400V)



Curve Characteristics

Fig. 7 - Switching Losses of Diode
(R_{Gon}=8Ω, V_{CE}=400V)

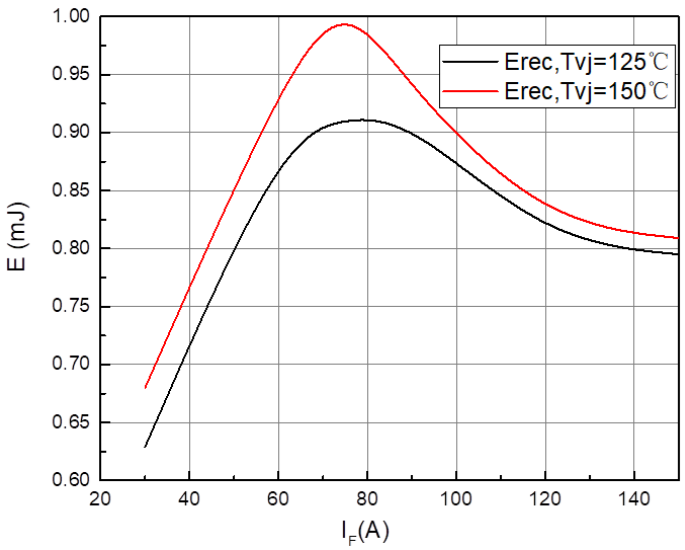


Fig. 8 - Switching Losses of Diode
(I_F=75A, V_{CE}=400V)

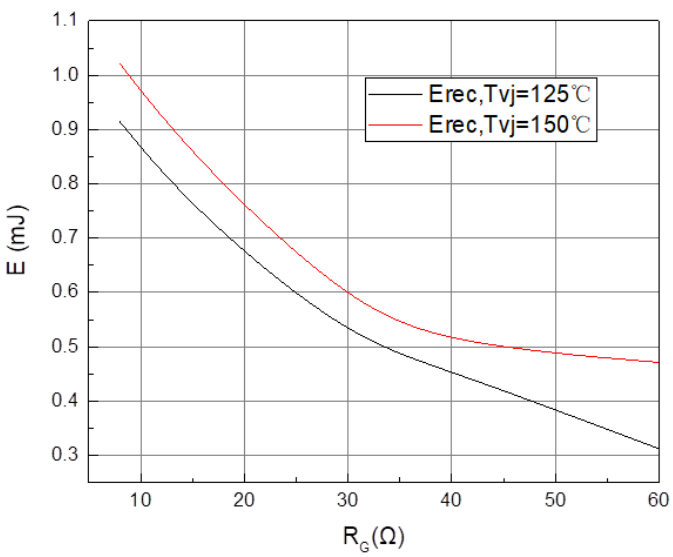
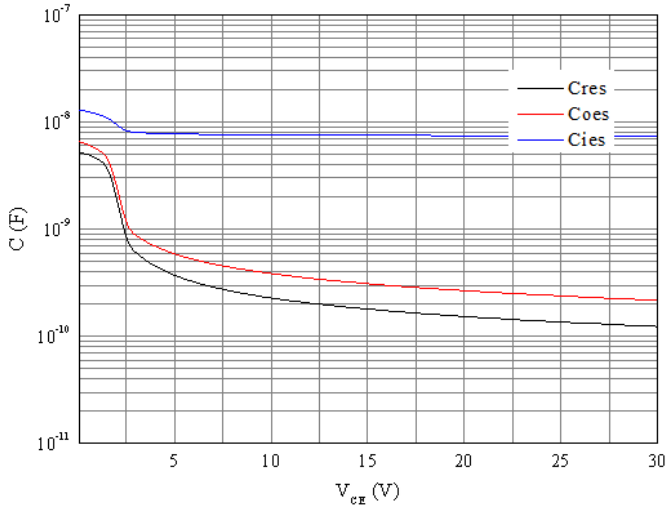


Fig. 9 - Capacitance Characteristics



Ordering Information

Device	Packing
Part Number-BP	Tube: 30pcs/Tube, 1800pcs/Ctn

单击下面可查看定价，库存，交付和生命周期等信息

>>MCC(美微科)