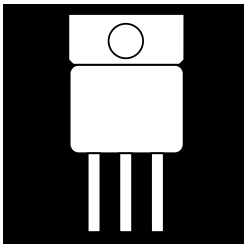
INSULATED GATE BIPOLAR TRANSISTOR (IGBT) IN A HERMETIC TO-258AA PACKAGE



1000 Volt, 8 Amp, N-Channel IGBT
In A Hermetic Metal Package

FEATURES

- Isolated Hermetic Metal Package
- High Input Impedance
- Low On-Voltage
- High Current Capability
- Fast Turn-Off
- Low Conductive Losses
- Available With Free Wheeling Diode
- Available Screened To MIL-S-19500, TX, TXV And S Levels

DESCRIPTION

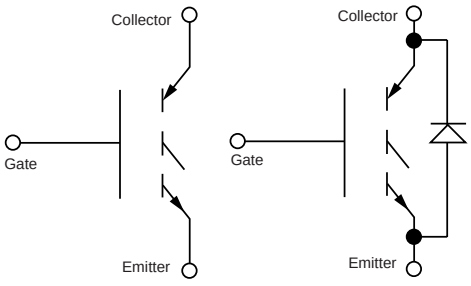
The IGBT power transistor features a high impedance insulated gate and a low on-resistance characteristic of bipolar transistors. These devices are ideally suited for motor drives, UPS converters, power supplies and resonant power converters.

MAXIMUM RATINGS @ 25°C Unless Specified Otherwise

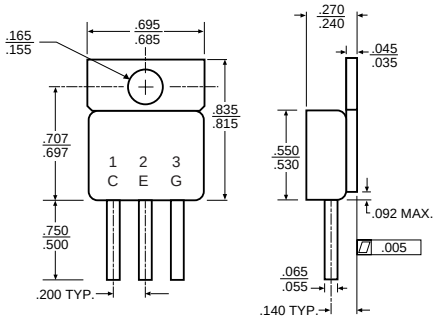
PART NUMBER	I_C (Cont.) @ 90°C, A	$V_{(BR)CES}$ V	$V_{CE\ (sat)}$ (Typ.) V	T_f (Typ.) ns	q_{JC} °C/W	P_D W	T_J °C
OM6512SC	8	1000	2.8	220	1.70	75	150
OM6513SC	8	1000	2.8	220	1.70	75	150

3.1

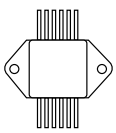
SCHEMATIC



MECHANICAL OUTLINE

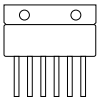


PACKAGE OPTIONS



MOD PAK

IGBTs are also available in Z-Tab, dual and quad pak styles. Please call the factory for more information.



6 PIN SIP

Omnirel
205 Crawford Street, Leominster, MA 01453 USA (508) 534-5776 FAX (508) 537-4246

PRELIMINARY DATA: OM6512SC

IGBT CHARACTERISTICS

Parameter - OFF		Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$	Collector Emitter Breakdown Voltage	1000			V	V_{CE} = 0 I_C = 2 mA
I_{CES}	Zero Gate Voltage Drain Current			0.25	mA	V_{CE} = Max. Rat., V_{GE} = 0
				1.0	mA	V_{CE} = 0.8 Max. Rat., V_{GE} = 0 T_C = 125°C
I_{GES}	Gate Emitter Leakage Current			100	nA	V_{GE} = ±20 V V_{CE} = 0 V
Parameter - ON						
$V_{GE(th)}$	Gate Threshold Voltage	2.0		4.0	V	V_{CE} = V_{GE}, I_C = 2 mA
$V_{CE(sat)}$	Collector Emitter Saturation Voltage		3.4		V	V_{GE} = 15 V, I_C = 8 A T_C = 25°C
$V_{CE(sat)}$	Collector Emitter Saturation Voltage		2.8	3.0	V	V_{GE} = 15 V, I_C = 8 A T_C = 100°C
Dynamic						
g_{fs}	Forward Transductance	3.0			S	V_{CE} = 25 V, I_C = 8 A
C_{ies}	Input Capacitance			1500	pF	V_{GE} = 0
C_{oes}	Output Capacitance			150	pF	V_{CE} = 25 V
C_{res}	Reverse Transfer Capacitance			50	pF	f = 1 mHz
Switching-Resistive Load						
$T_{d(on)}$	Turn-On Time		60		nS	V_{CC} = 800 V, I_C = 8 A
t_r	Rise Time		220		nS	V_{GE} = 15 V, R_g = 47 , T_j = 25°C
Switching-Inductive Load						
$t_{r(Volt)}$	Off Voltage Rise Time		.8		µS	$V_{CEclamp}$ = 800 V, I_C = 8 A
t_f	Fall Time		.9		µS	V_{GE} = 15 V, R_g = 47
t_{cross}	Cross-Over Time		2.2		µS	L = 0.1 mH, T_j = 100°C
E_{off}	Turn-Off Losses		6.0		mJ	

PRELIMINARY DATA: OM6513SC

IGBT CHARACTERISTICS

Parameter - OFF (see Note 1)		Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$	Collector Emitter Breakdown Voltage	1000			V	V_{CE} = 0 I_C = 2 mA
I_{CES}	Zero Gate Voltage Drain Current			0.25	mA	V_{CE} = Max. Rat., V_{GE} = 0
				1.0	mA	V_{CE} = 0.8 Max. Rat., V_{GE} = 0 T_C = 125°C
I_{GES}	Gate Emitter Leakage Current			100	nA	V_{GE} = ±20 V V_{CE} = 0 V
Parameter - ON						
$V_{GE(th)}$	Gate Threshold Voltage	2.0		4.0	V	V_{CE} = V_{GE}, I_C = 2 mA
$V_{CE(sat)}$	Collector Emitter Saturation Voltage		3.4		V	V_{GE} = 15 V, I_C = 8 A T_C = 25°C
$V_{CE(sat)}$	Collector Emitter Saturation Voltage		2.8	3.0	V	V_{GE} = 15 V, I_C = 8 A T_C = 100°C
Dynamic						
g_{fs}	Forward Transductance	3.0			S	V_{CE} = 25 V, I_C = 8 A
C_{ies}	Input Capacitance			1500	pF	V_{GE} = 0
C_{oes}	Output Capacitance			150	pF	V_{CE} = 25 V
C_{res}	Reverse Transfer Capacitance			50	pF	f = 1 mHz
Switching-Resistive Load						
$T_{d(on)}$	Turn-On Time		60		nS	V_{CC} = 800 V, I_C = 8 A
t_r	Rise Time		220		nS	V_{GE} = 15 V, R_g = 47 , T_j = 25°C
Switching-Inductive Load						
$t_{r(Volt)}$	Off Voltage Rise Time		.8		µS	$V_{CEclamp}$ = 800 V, I_C = 8 A
t_f	Fall Time		.9		µS	V_{GE} = 15 V, R_g = 47
t_{cross}	Cross-Over Time		2.2		µS	L = 0.1 mH, T_j = 100°C
E_{off}	Turn-Off Losses		6.0		mJ	

DIODE CHARACTERISTICS

V_f	Maximum Forward Voltage			3.3	V	I_F = 12 A, T_C = 25°C
				2.2	V	I_F = 12 A, T_C = 150°C
I_r	Maximum Reverse Current			500	µA	V_R = 1000 V, T_C = 25°C
				4.0	mA	V_R = 800 V, T_C = 125°C
t_{rr}	Reverse Recovery Time			35	nS	I_F = 1 A, d_i/d_t = -15 A µ/S V_R = 30 V, T_j = 25°C

Note 1: Limited by diode I_r characteristic.