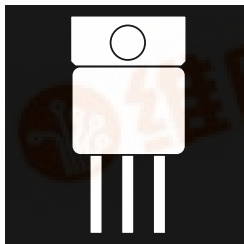


OM6516SC
OM6520SC

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



1000 Volt, 25 Amp, N-Channel IGBT
In A Hermetic Metal Package

FEATURES

- Isolated IGBTs In A Hermetic Package
- High Input Impedance
- Low On-Voltage
- High Current Capability
- High Switching Speed
- Low Tail Current
- Available With Free Wheeling Diode
- Available Screened To MIL-S-19500, TX, TXV And S Levels

DESCRIPTION

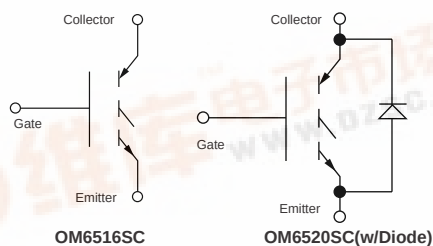
This IGBT power transistor features the high switching speeds of a power MOSFET and the low on-resistance of a bipolar transistor. It is ideally suited for high power switching applications such as frequency converters for 3Ø motors, UPS and high power SMPS.

MAXIMUM RATINGS @ 25°C Unless Specified Otherwise

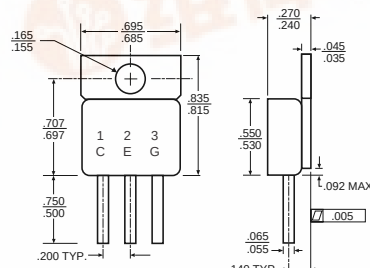
PART NUMBER	I _c (Cont.) @ 90°C, A	V _{(BR)CES} V	V _{CE} (sat) (Typ.) V	T _r (Typ.) ns	q _{JC} °C/W	P _D W	T _J °C
OM6516SC	25	1000	4.0	300	1.0	125	150
OM6520SC	25	1000	4.0	300	1.0	125	150

3.1

SCHEMATICS

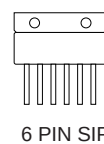
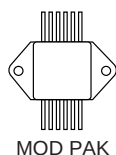


MECHANICAL OUTLINE



PACKAGE OPTIONS

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



PRELIMINARY DATA: OM6516SC

IGBT CHARACTERISTICS

Parameter - OFF		Min.	Typ.	Max.	Units	Test Conditions
V _{BRVCE(S)}	Collector Emitter Breakdown Voltage	1000			V	V _{CE} = 0 I _C = 250 µA
	Zero Gate Voltage		0.25		mA	V _{CE} = Max. Rat., V _{GE} = 0
I _{CES}	Drain Current		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	4.5		6.5	V	V _{CE} = V _{GE} , I _C = 1 mA
V _{CE(sat)}	Collector Emitter Saturation Voltage		3.0		V	V _{GE} = 15 V, I _C = 15 A T _C = 25°C
V _{CE(sat)}	Collector Emitter Saturation Voltage		4.0	4.5	V	V _{GE} = 15 V, I _C = 15 A T _C = 125°C
Dynamic						
g _{fs}	Forward Transconductance	5.5			S	V _{CE} = 20 V, I _C = 15 A
C _{ies}	Input Capacitance		2000		pF	V _{GE} = 0
C _{oes}	Output Capacitance		160		pF	V _{CE} = 25 V
C _{res}	Reverse Transfer Capacitance		65		pF	f = 1 MHz
Switching-Resistive Load						
T _{d(on)}	Turn-On Time		50		nS	V _{CC} = 600 V, I _C = 15 A
t _r	Rise Time		200		nS	V _{GE} = 15 V, R _g = 3.3 , T _J = 125°C
T _{d(off)}	Turn-Off Delay Time		200		nS	
t _f	Fall Time		300		nS	
Switching-Inductive Load						
T _{d(off)}	Turn-Off Delay Time		200		nS	V _{CE(sat)} = 600 V, I _C = 15 A
t _f	Fall Time		200		nS	V _{GE} = 15 V, R _g = 3.3 L = 1 mH, T _J = 125°C
E _{off}	Turn-Off Losses		1.5		mWs	

PRELIMINARY DATA: OM6520SC

IGBT CHARACTERISTICS

Parameter - OFF (See Note 1)		Min.	Typ.	Max.	Units	Test Conditions
V _{BRVCE(S)}	Collector Emitter Breakdown Voltage	1000			V	V _{GE} = 0 I _C = 250 µA
	Zero Gate Voltage			0.25	mA	V _{CE} = Max. Rat., V _{GE} = 0
I _{CES}	Drain Current			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	4.5		6.5	V	V _{CE} = V _{GE} , I _C = 1 mA
V _{CE(sat)}	Collector Emitter Saturation Voltage		3.0		V	V _{GE} = 15 V, I _C = 15 A T _C = 25°C
V _{CE(sat)}	Collector Emitter Saturation Voltage		4.0	4.5	V	V _{GE} = 15 V, I _C = 15 A T _C = 125°C
Dynamic						
g _{fs}	Forward Transconductance	5.5			S	V _{CE} = 20 V, I _C = 15 A
C _{ies}	Input Capacitance		2000		pF	V _{GE} = 0
C _{oes}	Output Capacitance		160		pF	V _{CE} = 25 V
C _{res}	Reverse Transfer Capacitance		65		pF	f = 1 MHz
Switching-Resistive Load						
T _{d(on)}	Turn-On Time		50		nS	V _{CC} = 600 V, I _C = 15 A
t _r	Rise Time		200		nS	V _{GE} = 15 V, R _g = 3.3 , T _J = 125°C
T _{d(off)}	Turn-Off Delay Time		200		nS	
t _f	Fall Time		300		nS	
Switching-Inductive Load						
T _{d(off)}	Turn-Off Delay Time		200		nS	V _{CE(sat)} = 600 V, I _C = 15 A
t _f	Fall Time		200		nS	V _{GE} = 15 V, R _g = 3.3 L = 1 mH, T _J = 125°C
E _{off}	Turn-Off Losses		1.5		mWs	

DIODE CHARACTERISTICS

V _f	Maximum Forward Voltage		1.85	V	I _F = 30 A, T _C = 25°C
			1.70	V	I _F = 30 A, T _C = 150°C
I _r	Maximum Reverse Current		500	µA	V _R = 1000 V, T _C = 25°C
			7.0	mA	V _R = 800 V, T _C = 125°C
t _{rr}	Reverse Recovery Time		50	nS	I _F = 1 A, dI/dt = -15 A/µS V _R = 30 V, T _J = 25°C

Note 1: Limited by diode I_r characteristic.