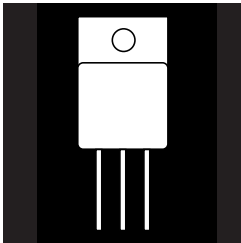


INSULATED GATE BIPOLAR TRANSISTOR (IGBT) IN A HERMETIC TO-254AA PACKAGE



1000 Volt, 15 And 20 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 Screened To MIL-S-19500, TX, TXV and S Levels
- Ceramic Feedthroughs Available

DESCRIPTION

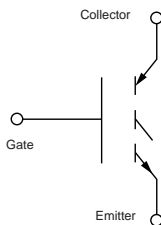
This IGBT power transistor features the high switching speeds of a power MOSFET and the low on-resistance of a bipolar transistor. It is ideally suited for high power switching applications such as frequency converters for 3Ø motors, UPS and high power SMPS.

MAXIMUM RATINGS @ 25°C Unless Specified Otherwise

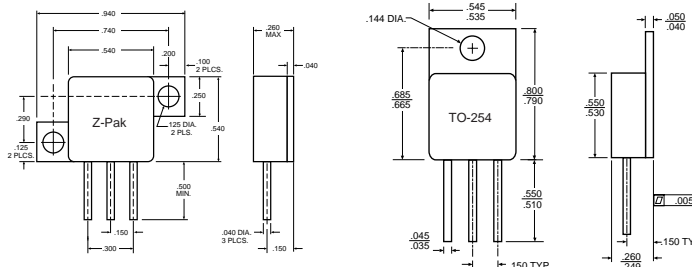
PART NUMBER	I _C (Cont.) @ 90°C, A	V _{(BR)CES} V	V _{CE(sat)} (Typ.) V	T _i (Typ.) ns	q _{JC} °C/W	P _D W	T _J °C
OM6517SA	20	1000	4.0	300	1.0	125	150
OM6526SA	15	1000	4.0	300	1.5	85	150

3.1

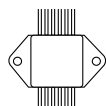
SCHEMATIC



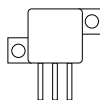
MECHANICAL OUTLINE



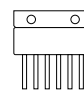
PACKAGE OPTIONS



MOD PAK



Z-TAB



6 PIN SIP

Standard Products are supplied with glass feedthroughs. For ceramic feedthroughs, add the letter "C" to the part number. Example - OMXXXXCSA. IGBTs are also available in Z-Tab, dual and quad pak styles - Please call the factory for more information.

PRELIMINARY DATA: OM6517SA

IGBT CHARACTERISTICS

Parameter - OFF	Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$ Collector Emitter Breakdown Voltage	1000			V	$V_{GE} = 0$ $I_C = 250 \mu A$
I_{CES} Zero Gate Voltage Drain Current			0.25	mA	$V_{CE} = \text{Max. Rat.}, V_{GE} = 0$
			1.0	mA	$V_{CE} = 0.8 \text{ Max. Rat.}, V_{GE} = 0$ $T_C = 125^\circ C$
I_{GES} Gate Emitter Leakage Current			± 100	nA	$V_{GE} = \pm 20 V$ $V_{CE} = 0 V$
Parameter - ON					
$V_{GE(th)}$ Gate Threshold Voltage	4.5		6.5	V	$V_{CE} = V_{GE}, I_C = 1 \text{ mA}$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		3.0		V	$V_{GE} = 15 V, I_C = 15 A$ $T_C = 25^\circ C$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		4.0	4.5	V	$V_{GE} = 15 V, I_C = 15 A$ $T_C = 125^\circ C$
Dynamic					
g_{fs} Forward Transconductance	5.5			S	$V_{CE} = 20 V, I_C = 15 A$
C_{res} Input Capacitance		2000		pF	$V_{GE} = 0$
C_{oes} Output Capacitance		160		pF	$V_{CE} = 25 V$
C_{res} Reverse Transfer Capacitance		65		pF	$f = 1 \text{ MHz}$
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	$V_{GE} = 15 V, R_g = 3.3 \Omega$
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$T_C = 125^\circ C$
t_f Fall Time		300		nS	
Switching-Inductive Load					
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$V_{CE(damp)} = 600 V, I_C = 15 A$
t_f Fall Time		200		nS	$V_{GE} = 15 V, R_g = 3.3 \Omega$
E_{off} Turn-Off Losses		1.5		mWs	$L = 1 \text{ mH}, T_C = 125^\circ C$

PRELIMINARY DATA: OM6526SA

IGBT CHARACTERISTICS

Parameter - OFF	Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)CES}$ Collector Emitter Breakdown Voltage	1000			V	$V_{CE} = 0$ $I_C = 150 \mu A$
I_{CES} Zero Gate Voltage Drain Current			150	μA	$V_{CE} = \text{Max. Rat.}, V_{GE} = 0$
			700	μA	$V_{CE} = 0.8 \text{ Max. Rat.}, V_{GE} = 0$ $T_C = 125^\circ C$
I_{GES} Gate Emitter Leakage Current			± 100	nA	$V_{GE} = \pm 20 V$ $V_{CE} = 0 V$
Parameter - ON					
$V_{GE(th)}$ Gate Threshold Voltage	4.5		6.5	V	$V_{CE} = V_{GE}, I_C = 700 \mu A$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		3.0		V	$V_{GE} = 15 V, I_C = 10 A$ $T_C = 25^\circ C$
$V_{CE(sat)}$ Collector Emitter Saturation Voltage		4.0	4.5	V	$V_{GE} = 15 V, I_C = 10 A$ $T_C = 125^\circ C$
Dynamic					
g_{fs} Forward Transconductance	3.5			S	$V_{CE} = 20 V, I_C = 10 A$
C_{res} Input Capacitance		1300		pF	$V_{GE} = 0$
C_{oes} Output Capacitance		100		pF	$V_{CE} = 25 V$
C_{res} Reverse Transfer Capacitance		50		pF	$f = 1 \text{ MHz}$
Switching-Resistive Load					
$T_{d(on)}$ Turn-On Time		50		nS	$V_{CC} = 600 V, I_C = 10 A$
t_r Rise Time		200		nS	$V_{GE} = 15 V, R_g = 3.3 \Omega$
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$T_C = 125^\circ C$
t_f Fall Time		300		nS	
Switching-Inductive Load					
$T_{d(off)}$ Turn-Off Delay Time		200		nS	$V_{CE(damp)} = 600 V, I_C = 10 A$
t_f Fall Time		200		nS	$V_{GE} = 15 V, R_g = 3.3 \Omega$
E_{off} Turn-Off Losses		1.1		mWs	$L = 1 \text{ mH}, T_C = 125^\circ C$