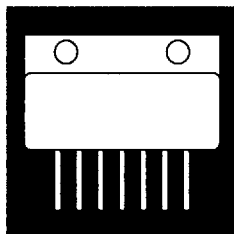


INSULATED GATE BIPOLAR TRANSISTOR (IGBT) IN A HERMETIC ISOLATED SIP PACKAGE



1000 Volt, 15 Amp, N-Channel IGBT
In A Hermetic Metal Package

FEATURES

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

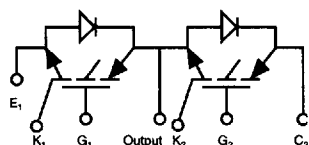
DESCRIPTION

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.

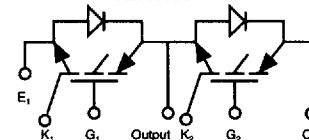
MAXIMUM RATINGS @ 25°C Unless Specified Otherwise

PART NUMBER	I_C (Cont.) @ 90°C, A	$V_{(BR)CES}$ V	$V_{CE(sat)}$ (Typ.) V	T_i (Typ.) ns	θ_{JC} °C/W	P_D W	T_J °C
OM6531SS	15	1000	4.0	300	1.50	85	150
OM6532SS	15	1000	4.0	300	1.50	85	150

SCHEMATIC

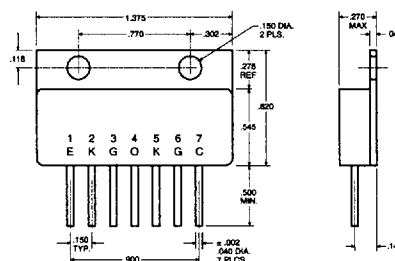


OM6531SS



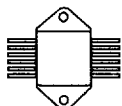
OM6532SS (with Diodes)

MECHANICAL OUTLINE



Pin 1: Emitter
Pin 2: Kelvin
Pin 3: Gate
Pin 4: Output
Pin 5: Kelvin
Pin 6: Gate
Pin 7: Collector

PACKAGE OPTIONS



MOD-PAK

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

PRELIMINARY DATA: OM6531SS

IGBT CHARACTERISTICS

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

PRELIMINARY DATA: OM6532SS

IGBT CHARACTERISTICS

Parameter - OFF (see Note 1)		Min.	Typ.	Max.	Units	Test Conditions
$V_{BE(ON)}$	Collector Emitter Breakdown Voltage	1000			V	$V_{CE} = 0$ $I_C = 150 \mu A$
	Zero Gate Voltage			150	μA	$V_{CE} = \text{Max. Rat.}, V_{GE} = 0$
I_{CES}	Drain Current			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	$V_{GE} = \pm 20 \text{ V}$ $V_{CE} = 0 \text{ V}$
Parameter - ON						
$V_{GE(TH)}$	Gate Threshold Voltage	4.5		6.5	V	$V_{CE} = V_{GE}, I_C = 700 \mu A$
$V_{CE(ON)}$	Collector Emitter Saturation Voltage		3.0		V	$V_{GE} = 15 \text{ V}, I_C = 10 \text{ A}$ $T_C = 25^\circ C$
$V_{CE(ON)}$	Collector Emitter Saturation Voltage		4.0	4.5	V	$V_{GE} = 15 \text{ V}, I_C = 10 \text{ A}$ $T_C = 125^\circ C$
Dynamic						
g_{fs}	Forward Transconductance	3.5			S	$V_{CE} = 20 \text{ V}, I_C = 10 \text{ A}$
C_{ies}	Input Capacitance		1300		pF	$V_{GE} = 0$
C_{oes}	Output Capacitance		100		pF	$V_{CE} = 25 \text{ V}$
C_{res}	Reverse Transfer Capacitance		50		pF	$f = 1 \text{ MHz}$
Switching-Resistive Load						
$T_{d(on)}$	Turn-On Time		50		nS	$V_{CC} = 600 \text{ V}, I_C = 10 \text{ A}$
t_r	Rise Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3 \Omega$ $T_J = 125^\circ C$
$T_{d(off)}$	Turn-Off Delay Time		200		nS	
t_f	Fall Time		300		nS	
Switching-Inductive Load						
$T_{d(on)}$	Turn-On Delay Time		200		nS	$V_{CE(sat)} = 600 \text{ V}, I_C = 10 \text{ A}$
t_f	Fall Time		200		nS	$V_{GE} = 15 \text{ V}, R_g = 3.3 \Omega$
E_{off}	Turn-Off Losses		1.1		mWs	$L = 1 \text{ mH}, T_J = 125^\circ C$
DIODE CHARACTERISTICS						
V_f	Maximum Forward Voltage			1.85	V	$I_f = 30 \text{ A}, T_C = 25^\circ C$
I_f	Maximum Reverse Current			500	μA	$V_R = 1000 \text{ V}, T_C = 25^\circ C$
t_{rr}	Reverse Recovery Time			7.0	mA	$V_R = 800 \text{ V}, T_C = 125^\circ C$
				50	nS	$I_f = 1 \text{ A}, dI/dt = -15 \text{ A}/\mu S$ $V_R = 30 \text{ V}, T_J = 25^\circ C$

Note 1: Limited by diode I_f characteristic.