



**Features:**

- n Low  $V_{CE(sat)}$  IGBT
- n Low switching losses
- n 10us short circuit capability
- n Fast & soft reversere covery FRD
- n Temperature sense included
- n Maximum junction temperature 175°C

**Typical Applications:**

- n Inverter for Motor Drive
- n AC and DC servo drive amplifier
- n Uninterruptible Power Supply

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT	
			Min	Type	Max		
$V_{CES}$	Collector-Emitter voltage	$T_j=25^{\circ}C$			1200	V	
$V_{GES}$	Gate-Emitter voltage	$T_j=25^{\circ}C$			$\pm 20$	V	
$I_C$	Collector current	Continuous @ $T_C=80^{\circ}C$			300	A	
$I_{CP}$		$T_j=25^{\circ}C, 1ms$			600	A	
$P_C$	Collector power dissipation	$T_j=175^{\circ}C,$			1800	W	
$T_j$	Junction temperature	/			175	$^{\circ}C$	
$T_{stg}$	Storage temperature	/	-40		150	$^{\circ}C$	
$V_{iso}$	Isolation between terminal and copper base	$T_j=25^{\circ}C, AC: 1minute$		2500		V	
Screw torque	Mounting(M5)	/	3.0	4.0	5.0	N·m	
$I_{CES}$	Zero gate voltage collector current	$T_j=25^{\circ}C, V_{CE}=1200V, V_{GE}=0V$			5.0	mA	
$I_{GES}$	Gate-Emitter leakage current	$T_j=25^{\circ}C, V_{CE}=0V, V_{GE}=\pm 20V$			$\pm 400$	nA	
$V_{GE(th)}$	Gate-Emitter threshold voltage	$T_j=25^{\circ}C, V_{CE}=20V, I_C=1.7mA$	5.2	5.6	6.0	V	
$V_{CE(sat)}$	Collector-Emitter saturation voltage	$T_j=25^{\circ}C, V_{GE}=15V, I_C=300A$		2.00	2.50	V	
		$T_j=125^{\circ}C, V_{GE}=15V, I_C=300A$		2.40		V	
$R_{G(int)}$	Integrated Gate Resistor			4		$\Omega$	
$C_{ies}$	Input capacitance	$T_j=25^{\circ}C, V_{CE}=25V, V_{GE}=0V, f=1MHz$		26		nF	
$t_{on}$	Turn-on time	$T_j=125^{\circ}C, V_{CC}=600V, I_C=300A, V_{GE}=\pm 15V, R_G=15\Omega, Inductive load$		75		ns	
$t_r$				45		ns	
$t_{off}$			Turn-off time		400		ns
$t_f$					130		ns
tsc	Short circuit withstand time	$T_j=150^{\circ}C, V_{CC}=720V, V_{GE}=\pm 15V, R_G=15\Omega$	10			$\mu s$	
$V_F$	Forward on voltage	$T_j=25^{\circ}C, I_F=300A$		2.00	2.20	V	
		$T_j=125^{\circ}C, I_F=300A$		2.00		V	
$t_{rr}$	Reverse recovery time	$T_j=125^{\circ}C, I_F=300A$		350		ns	
		$T_j=150^{\circ}C, I_F=300A$		160		ns	
$R_{th(j-c)}$	Thermal resistance(1 device)	IGBT			0.05	$^{\circ}C/W$	
		FWD			0.3	$^{\circ}C/W$	
$R_{th(c-f)}$	Contact thermal resistance (1 device)	With thermal compound		0.050		$^{\circ}C/W$	
$W_t$	Weight				350	g	
Outline	454H3P						

Outline & Circuit Diagram

