

Characteristics

$T_C = 25^{\circ}\text{C}$, unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 4\text{mA}$	4.8	5.5	6.5	V
I_{CES}	$V_{GE} = 0$; $V_{CE} = V_{CES}$; $T_j = 25(125)^{\circ}\text{C}$		0.2	0.6	mA
$V_{CE(TO)}$	$T_j = 25(125)^{\circ}\text{C}$		1(0.9)	1.15(1.05)	V
r_{CE}	$V_{GE} = 15\text{V}$, $T_j = 25(125)^{\circ}\text{C}$		9(12)	12(15)	$\text{m}\Omega$
$V_{CE(sat)}$	$I_C = 50\text{A}$; $V_{GE} = 15\text{V}$; chip level		1.9(2.1)	2.35(2.55)	V
C_{ies}	under following conditions $V_{GE} = 0$, $V_{CE} = 25\text{V}$, $f = 1\text{MHz}$		8.1		nF
C_{oes}			1.2		
C_{res}			1.1		
L_{CE}				20	nH
$R_{CC'+EE'}$	res., terminal-chip $T_C = 25(125)^{\circ}\text{C}$		0.35(0.5)		$\text{m}\Omega$
$t_{d(on)}$	under following conditions: $V_{CC} = 600\text{V}$, $I_C = 100\text{A}$ $R_{Gon} = R_{Goff} = 8\ \Omega$, $T_j = 125^{\circ}\text{C}$ $V_{GE} = \pm 15\text{V}$		80		ns
t_r			40		ns
$t_{d(off)}$			460		ns
t_f			65		ns
$E_{on}(E_{off})$			10(9)		mJ
Inverse Diode under following conditions:					
$V_F = V_{EC}$	$I_F = 100\text{A}$; $V_{GE} = 0\text{V}$; $T_j = 25(125)^{\circ}\text{C}$		2(1.8)	2.5(2.3)	V
$V_{(TO)}$	$T_j = 25(125)^{\circ}\text{C}$		1.1	1.45(1.25)	V
r_T	$T_j = 25(125)^{\circ}\text{C}$		9	13(11)	$\text{m}\Omega$
I_{RRM}	$I_F = 100\text{A}$; $T_j = 125^{\circ}\text{C}$		145		A
Q_{rr}	$di/dt = 3600\text{A/us}$		16.5		μC
E_{rr}	$V_{GE} = V$		5.5		mJ
Thermal Characteristics					
$R_{th(j-c)}$	per IGBT			0.15	K/W
$R_{th(j-c)D}$	per Inverse Diode			0.3	K/W
$R_{th(c-s)}$	per module			0.038	K/W
Mechanical Data					
M_s	to heatsink M6	3		5	Nm
M_t	to terminals M6	2.5		5	Nm
W				325	g