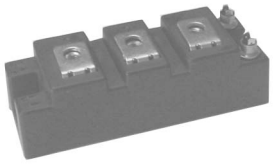
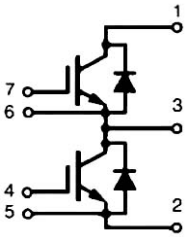
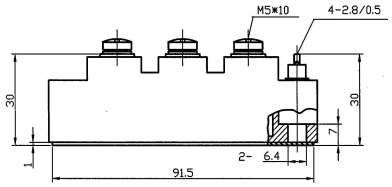
SII75S12

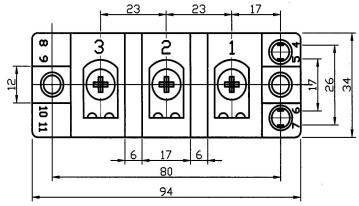
SPT IGBT Modules

Dimensions in mm (1mm = 0.0394")









Absolute Maximum Ratings T_C = 25°C, unless otherwise specified

Symbol	Conditions	Values	Units
IGBT			
V_{CES}		1200	V
I_C	T_C= 25(80)°C	100(70)	A
I_{CRM}	T_C= 25(80)°C, t_P =1ms	200(140)	A
V_{GES}		±20	V
$T_{Vj,}(T_{stg})$	$T_{OPERATION} \leq T_{stg}$	–40...+150(125)	°C
V_{isol}	AC, 1min	4000	V
Inverse Diode			
I_F=-I_C	T_C= 25(80)°C	75(50)	A
I_{FRM}	T_C= 25(80)°C, t_P =1ms	200(140)	A
I_{FSM}	t_P =10ms; sin.;T_j=150 °C	550	A

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SPT IGBT Modules

Characteristics $T_C = 25^oC$, unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 4mA$	4.8	5.5	6.5	V
I_{CES}	$V_{GE} = 0$; $V_{CE} = V_{CES}$; $T_j = 25(125)^oC$		0.1	0.3	mA
$V_{CE(TO)}$	$T_j = 25(125)^oC$		1(0.9)	1.15(1.05)	V
r_{CE}	$V_{GE} = 20V$, $T_j = 25(125)^oC$		18(24)	24(30)	mΩ
$V_{CE(sat)}$	$I_C = 50A$; $V_{GE} = 15V$; chip level		1.9(2.1)	2.35(2.55)	V
C_{ies}	under following conditions		4.5		
C_{oes}	$V_{GE} = 0$, $V_{CE} = 25V$, f = 1MHz		0.6		nF
C_{res}			0.55		
L_{CE}				25	nH
$R_{CC'+EE'}$	res., terminal-chip $T_C = 25(125)^oC$		0.75(1)		mΩ
	under following conditions:				
$t_{d(on)}$	$V_{CC} = 600V$, $I_C = 50A$		90		ns
t_r	$R_{Gon} = R_{Goff} = 15Ω$, $T_j = 125^oC$		55		ns
$t_{d(off)}$	$V_{GE} = \pm 15V$		400		ns
t_f			40		ns
$E_{on}(E_{off})$			5.7(4.7)		mJ
Inverse Diode	under following conditions:				
$V_F = V_{EC}$	$I_F = 50A$; $V_{GE} = 0V$; $T_j = 25(125)^oC$		2(1.8)	2.5	V
$V_{(TO)}$	$T_j = 25(125)^oC$		1.1	1.2	V
r_T	$T_j = 25(125)^oC$		18	26	mΩ
I_{RRM}	$I_F = 50A$; $T_j = 125^oC$		80		A
Q_{rr}	di/dt = 2100A/us		8.5		uC
E_{rr}	V_{GE} = V		3.1		mJ
Thermal Characteristics					
$R_{th(j-c)}$	per IGBT			0.3	K/W
$R_{th(j-c)D}$	per Inverse Diode			0.6	K/W
$R_{th(c-s)}$	per module			0.05	K/W
Mechanical Data					
M_s	to heatsink M6	3		5	Nm
M_t	to terminals M5	2.5		5	Nm
w				160	g