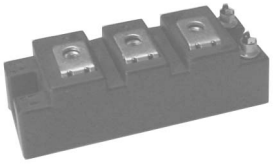
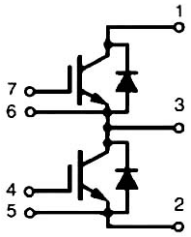
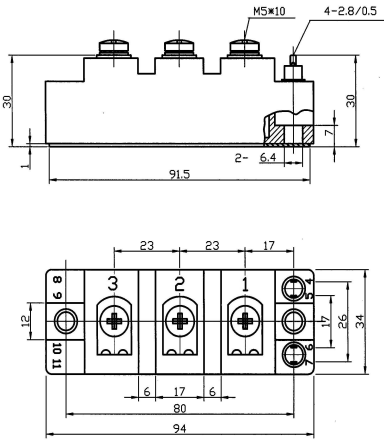
SII145S12

SPT IGBT Modules





Dimensions in mm (1mm = 0.0394")



Absolute Maximum Ratings $T_C = 25^oC$, unless otherwise specified

Symbol	Conditions	Values	Units
IGBT			
V_{CES}		1200	V
I_C	T_C= 25(80)^{o}C	190(135)	A
I_{CRM}	T_C= 25(80)^{o}C, t_P =1ms	380(270)	A
V_{GES}		±20	V
T_{Vj},(T_{stg})	$T_{OPERATION} \leq T_{stg}$	−40...+150(125)	^{o}C
V_{isol}	AC, 1min	4000	V
Inverse Diode			
$I_F = -I_C$	T_C= 25(80)^{o}C	130(90)	A
I_{FRM}	T_C= 25(80)^{o}C, t_P =1ms	380(270)	A
I_{FSM}	t_P =10ms; sin.;T_j=150^{o}C	1100	A
Freewheeling diode			
$I_F = -I_C$	T_C= 25(80)^{o}C	130(90)	A
I_{FRM}	T_C= 25(80)^{o}C, t_P =1ms	350(260)	A
I_{FSM}	t_P =10ms; sin.;T_j=150^{o}C	1100	A

Sirectifier®

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

Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, I_C =2mA	4.5	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} = 15V, $T_j = 25(125)^oC$		9(12)	12(15)	mΩ
$V_{CE(sat)}$	I_C =100A; V_{GE} = 15V; chip level		1.9(2.1)	2.35(2.55)	V
C_{ies}	under following conditions		9		
C_{oes}	V_{GE} = 0, V_{CE} = 25V, f = 1MHz		1		nF
C_{res}			1		
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 = 100A		190		ns
t_r	$R_{Gon} = R_{Goff}$ = 9 Ω $T_j = 125^oC$		50		ns
$t_{d(off)}$	V_{GE} = ± 15V		590		ns
t_f			50		ns
$E_{on}(E_{off})$			11.5(9.5)		mJ
Inverse Diode	under following conditions:				
$V_F = V_{EC}$	I_F = 100A; V_{GE} = 0V; $T_j = 25(125)^oC$		2(1.8)	2.5	V
$V_{(TO)}$	$T_j = 25(125)^oC$		1.1	1.4	V
r_T	$T_j = 25(125)^oC$		9	13	mΩ
I_{RRM}	I_F = 100A; $T_j = 125^oC$		130		A
Q_{rr}	di/dt = 3500A/us		14		uC
E_{rr}	V_{GE} = V		4.8		mJ
FWD	under following conditions:				
$V_F = V_{EC}$	I_F = 100A; V_{GE} = 0V; $T_j = 25(125)^oC$		2.1(1.8)	2.5	V
$V_{(TO)}$	$T_j = 25(125)^oC$		1.1	1.4	V
r_T	$T_j = 25(125)^oC$		9	13	mΩ
I_{RRM}	I_F = 100A; $T_j = 25(125)^oC$		130		A
Q_{rr}	di/dt = A/us		14		uC
E_{rr}	V_{GE} = V		4.8		mJ
Thermal Characteristics					
$R_{th(j-c)}$	per IGBT			0.165	K/W
$R_{th(j-c)D}$	per Inverse Diode			0.36	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