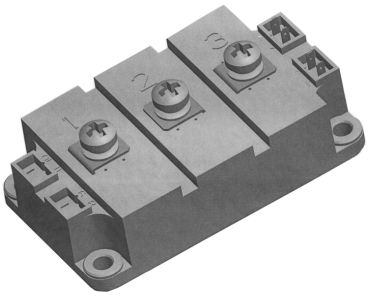
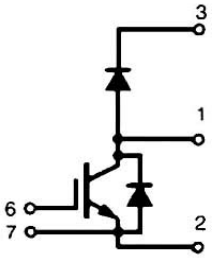
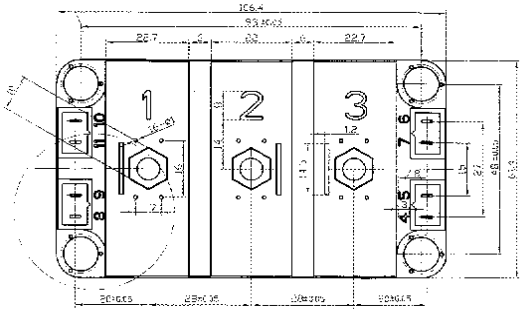
SID400S12

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	565(400)	A
I_{CRM}	T_C= 25(80)°C, t_P =1ms	1130(800)	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	390(260)	A
I_{FRM}	T_C= 25(80)°C, t_P =1ms	1130(800)	A
I_{FSM}	t_P =10ms; sin.;T_j=150 °C	2900	A

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SID400S12

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 = 12mA	4.8	5.5	6.45	V
I_{CES}	V_{GE} = 0; $V_{CE} = V_{CES}$; $T_j = 25^oC$		0.2	0.6	mA
$V_{CE(TO)}$	$T_j = 25(125)^oC$		1(0.9)	1.15(1.05)	V
r_{CE}	V_{GE} = 15V, $T_j = 25(125)^oC$		3(4)	4(5)	mΩ
$V_{CE(sat)}$	I_C =300A; V_{GE} = 15V; chip level		1.9(2.1)	2.35(2.55)	V
C_{ies}	under following conditions		26		
C_{oes}	V_{GE} = 0, V_{CE} = 25V, f = 1MHz		3		nF
C_{res}			3		
L_{CE}				20	nH
$R_{CC'+EE'}$	res., terminal-chip $T_C = 25(125)^oC$		0.35(0.5)		mΩ
	under following conditions:				
$t_{d(on)}$	V_{CC} = 600V, I_C = 300A		110		ns
t_r	$R_{Gon} = R_{Goff}$ =4.7Ω, $T_j = 125^oC$		60		ns
$t_{d(off)}$	V_{GE} = ± 15V		800		ns
t_f			60		ns
$E_{on}(E_{off})$			32(31)		mJ
Inverse Diode	under following conditions:				
$V_F = V_{EC}$	I_F = 300A; 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	$T_j = 25(125)^oC$		3	4.3	mΩ
I_{RRM}	I_F = 300A; $T_j = 125^oC$		176		A
Q_{rr}	di/dt = 2400A/us		40		uC
E_{rr}	V_{GE} = V		16		mJ
Thermal Characteristics					
$R_{th(j-c)}$	per IGBT			0.055	K/W
$R_{th(j-c)D}$	per Inverse Diode			0.125	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

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