

3. Absolute Maximum Ratings (Tc=25°C unless without specified)

Items		Symbols	Conditions	Maximum Ratings	Units
Inverter	Collector-Emitter Voltage	V _{CES}		1200	V
	Gate-Emitter Voltage	V _{GES}		±20	V
	Collector Current	I _c	Continuous	10	A
		I _{CP}	1ms	20	A
		-I _c		10	A
Collector Power Dissipation	P _c	1 device	80	W	
Converter	Repetitive Peak Reverse Voltage	V _{RRM}		1600	V
	Average Output Current	I _o		25	A
	Surge Current (Non-Repetitive)	I _{FSM}	Tj=150°C, ^{8.3} 10ms	286	A
	I ² t (Non-Repetitive)		Tj=150°C, ^{8.3} 10ms	340	A ² s
Operating Junction Temperature		T _j		+ 150	°C
Storage Temperature		T _{stg}		-40 ~ +125	°C
Isolation Voltage		Viso	AC : 1 minute	AC 2500	V
Mounting Screw Torque (*1)				1.7	N · m

Note : (*1) Recommendable Value : 1.3 ~ 1.7 N · m (M4)

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4. Electrical Characteristics (Tj=25°C unless without specified)

Characteristics		Symbols	Conditions	min.	max.	Units
Inverter	Zero gate voltage collector current	I_{CES}	$V_{CE} = 1200V$ $V_{GE} = 0V$		1.0	mA
	Gate-emitter leakage current	I_{GES}	$V_{CE} = 0V$ $V_{GE} = \pm 20V$		200	nA
	Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = 20V$ $I_C = 10mA$	6.0	9.0	V
	Collector-emitter saturation Voltage	$V_{CE(sat)}$	$V_{GE} = 15V$ $I_C = 10A$		3.0	V
	Collector-Emitter Voltage	$-V_{CE}$	$-I_C = 10A$		3.0	
	Input capacitance	C_{ies}	$V_{GE} = 0V$ $V_{CE} = 10V$ $f = 1MHz$		1400 (typ.)	pF
	Switching Time	t_{on}	$V_{CC} = 600V$ $I_C = 10A$ $V_{GE} = \pm 15V$ $R_G = 120\Omega$		1.2	μs
		t_r			0.6	
		t_{off}			1.0	
		t_f			0.3	
Reverse Recovery Time of FRD	t_{rr}	$I_F = 10A$		350	ns	
Converter	Forward Voltage	V_{FM}	$I_F = 25A$		1.5	V
	Reverse Current	I_{RRM}	$V_R = 1600V$		1	mA
Thermistor						

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5. Thermal Characteristics

Characteristics	Symbols	Conditions	min.	max.	Units
Thermal Resistance (1 device)	Rth(j-c)	Inverter IGBT		1.67	°C/W
		Inverter FRD		3.30	
		Converter Diode		1.5	
Contact Thermal Resistance	Rth(c-f)	With Thermal Compound	(typ)	0.05	

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