

1 Package

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Table 1 Insulation Coordination

Parameter	Symbol	Note or test condition	Values	Unit
Isolation test voltage	V_{ISOL}	RMS, $f = 50$ Hz, $t = 1$ min	2.5	kV
Internal Isolation		basic insulation (class 1, IEC 61140)	Al_2O_3	
Creepage distance	d_{Creep}	terminal to heatsink	11.2	mm
Creepage distance	d_{Creep}	terminal to terminal	6.8	mm
Clearance	d_{Clear}	terminal to heatsink	9.4	mm
Clearance	d_{Clear}	terminal to terminal	5.5	mm
Comperative tracking index	CTI		> 400	
RTI Elec.	RTI	housing	140	°C

Table 2 Characteristic Values

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Stray inductance module	L_{SCE}			35		nH
Module lead resistance, terminals - chip	$R_{AA'+CC'}$	$T_H = 25^\circ C$, per switch		2.8		mΩ
Module lead resistance, terminals - chip	$R_{CC'+EE'}$	$T_H = 25^\circ C$, per switch		2.2		mΩ
Storage temperature	T_{stg}		-40		125	°C
Mounting torque for modul mounting	M	- Mounting according to M5, valid application note Screw	1.3		1.5	Nm
Weight	G			78		g

Note: The current under continuous operation is limited to 25 A rms per connector pin.

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Table 3 Maximum Rated Values

Parameter	Symbol	Note or test condition	Values	Unit
Collector-emitter voltage	V_{CES}	$T_{vj} = 25^\circ C$	1200	V
Continous DC collector current	I_{CDC}	$T_{vj\ max} = 175^\circ C$ $T_H = 65^\circ C$	100	A
Repetitive peak collector current	I_{CRM}	$t_p = 1$ ms	200	A
Gate-emitter peak voltage	V_{GES}		±20	V

Table 4 Characteristic Values

Parameter	Symbol	Note or test condition	Values			Unit	
			Min.	Typ.	Max.		
Collector-emitter saturation voltage	$V_{CE\ sat}$	$I_C = 100\ A,$ $V_{GE} = 15\ V$		$T_{vj} = 25\ ^\circ C$	1.50	TBD	V
				$T_{vj} = 125\ ^\circ C$	1.64		
				$T_{vj} = 175\ ^\circ C$	1.72		
Gate threshold voltage	V_{GEth}	$I_C = 2.5\ mA,$ $V_{CE} = V_{GE},$ $T_{vj} = 25\ ^\circ C$	5.15	5.80	6.45	V	
Gate charge	Q_G	$V_{GE} = \pm 15\ V,$ $V_{CE} = 600\ V$		1.8		μC	
Internal gate resistor	R_{Gint}	$T_{vj} = 25\ ^\circ C$		1.5		Ω	
Input capacitance	C_{ies}	$f = 100\ kHz,$ $T_{vj} = 25\ ^\circ C,$ $V_{CE} = 25\ V,$ $V_{GE} = 0\ V$		21.7		nF	
Reverse transfer capacitance	C_{res}	$f = 100\ kHz,$ $T_{vj} = 25\ ^\circ C,$ $V_{CE} = 25\ V,$ $V_{GE} = 0\ V$		0.076		nF	
Collector-emitter cut-off current	I_{CES}	$V_{CE} = 1200\ V,$ $V_{GE} = 0\ V$	$T_{vj} = 125\ ^\circ C$		0.009	mA	
Gate-emitter leakage current	I_{GES}	$V_{CE} = 0\ V,$ $V_{GE} = 20\ V,$ $T_{vj} = 25\ ^\circ C$			100	nA	
Turn on delay time (inductive load)	t_{don}	$I_C = 100\ A,$ $V_{CE} = 600\ V,$ $V_{GE} = \pm 15\ V,$ $R_{Gon} = 3.3\ \Omega$		$T_{vj} = 25\ ^\circ C$	0.163		μs
				$T_{vj} = 125\ ^\circ C$	0.184		
				$T_{vj} = 175\ ^\circ C$	0.193		
Rise time (inductive load)	t_r	$I_C = 100\ A,$ $V_{CE} = 600\ V,$ $V_{GE} = \pm 15\ V,$ $R_{Gon} = 3.3\ \Omega$		$T_{vj} = 25\ ^\circ C$	0.054		μs
				$T_{vj} = 125\ ^\circ C$	0.056		
				$T_{vj} = 175\ ^\circ C$	0.057		
Turn off delay time (inductive load)	t_{doff}	$I_C = 100\ A,$ $V_{CE} = 600\ V,$ $V_{GE} = \pm 15\ V,$ $R_{Goff} = 3.3\ \Omega$		$T_{vj} = 25\ ^\circ C$	0.328		μs
				$T_{vj} = 125\ ^\circ C$	0.410		
				$T_{vj} = 175\ ^\circ C$	0.459		