SCOMES

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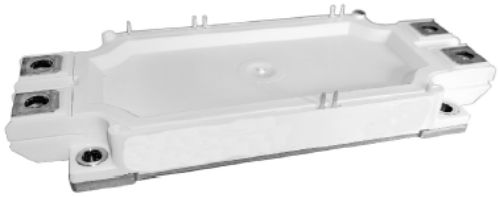
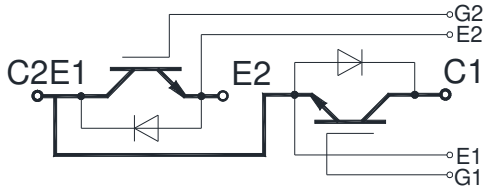


MRI 450.12-E

2 in 1 IGBT Modules



Features:

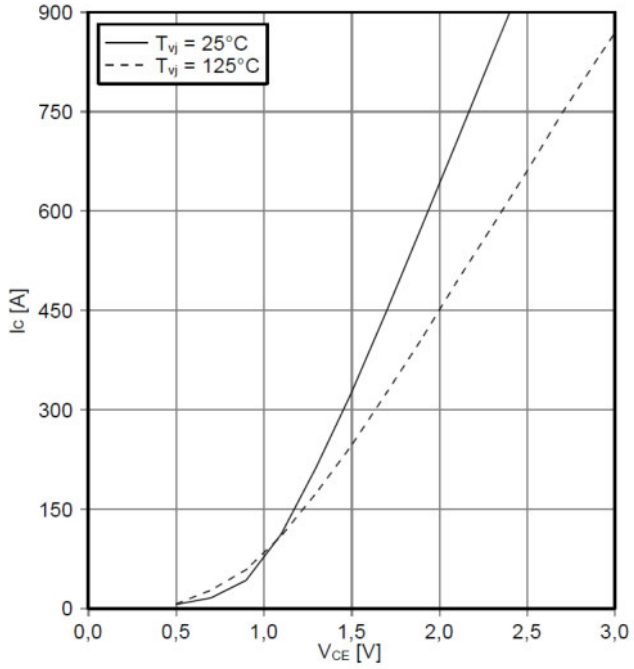
- Low V_{CEsat}
- Standard Housing

Typical Applications:

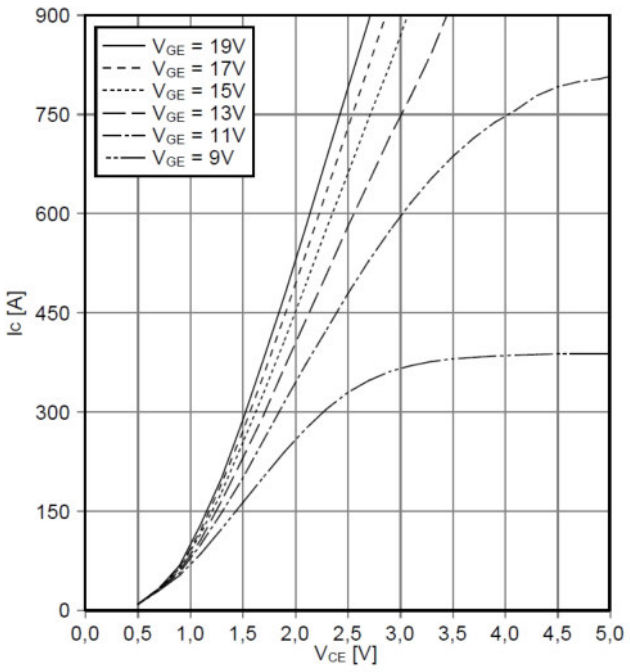
- Motor Drive
- Servo Drive
- Uninterruptible Power Supply System
- Wind Turbines
- High Power Converters

SYMBOL	CHARACTERISTIC	TEST CONDITIONS		VALUE			UNIT
				Min	Type	Max	
V_{CES}	Collector-Emitter voltage	T_j=25°C				1200	V
V_{GES}	Gate-Emitter voltage	T_j=25°C				±20	V
I_C	Collector current	Continuous@ T_C=80°C				450	A
I_{CP}		T_P= 1ms				900	A
P_C	Collector power dissipation	T_j=25°C ,1 device				2100	W
T_{Vjop}	Junction temperature	/		-40		125	℃
T_{stg}	Storage temperature	/		-40		125	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute		2500			V
Screw torque	Mounting(M5)	/		3.0		6.0	N·m
	Terminals(M6)	/		3.0		6.0	N·m
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1200V，V_{GE}=0V				5.0	mA
I_{GES}	Gate-Emitter leakage current	T_j=25°C ,V_{CE}=0V，V_{GE}=±20V				0.4	μA
$V_{GE(th)}$	Gate-Emitter threshold voltage	T_j=25°C ,V_{CE}=20V，I_C=18mA		5.0	5.8	6.5	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=450A			1.70	2.15	V
		T_j=125°C ,V_{GE}=15V，I_C=450A			2.00		V
R_{Gint}	Internal gate resistor	T_j=25°C			1.7		Ω
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V，V_{GE}=0V，f=1MHz			32.0		nF
C_{res}	Reverse transfer capacitance				1.5		nF
t_{on}	Turn-on time	V_{CC}=600V，I_C=450A，V_{GE}=±15V，R_g=1.6Ω，Inductive load	T_j=25°C		250		ns
			T_j=125°C		300		ns
t_r	Rise time		T_j=25°C		90		ns
			T_j=125°C		100		ns
t_{off}	Turn-off time		T_j=25°C		550		ns
			T_j=125°C		650		ns
t_f	Fall time		T_j=25°C		130		ns
			T_j=125°C		160		ns
E_{on}	Turn-on energy loss per pulse	V_{CC}=600V，I_C=450A，Ls=80nH，V_{GE}=±15V，di/dt=7800A/μs ，R_{gon}=1.6Ω	T_j=25°C		22		mJ
			T_j=125°C		33		mJ
E_{off}	Turn-off energy loss per pulse	V_{CC}=600V，I_C=450A，Ls=80nH，V_{GE}=±15V，dV/dt=3600V/μs ，R_{goff}=1.6Ω	T_j=25°C		43		mJ
			T_j=125°C		65		mJ
Isc	Short circuit	T_j=125°C，V_{CC}=900V，V_{GE}≤15V			1800		A
V_F	Forward on voltage	I_F=450A	T_j=25°C		1.65	2.15	V
		I_F=450A	T_j=125°C		1.65		V
t_{rr}	Reverse recovery time	I_F=450A	T_j=25°C		150		μs

t_{rr}	Reverse recovery time	I_F=450A	T_j=125°C		210		µs
$R_{th(j-c)}$	Thermal resistance(1 device)	IGBT				0.06	°C /W
		FWD				0.10	°C /W
$R_{th(c-H)}$	Thermal resistance, case to heatsink	per module			0.009		°C /W
		IGBT			0.030		°C /W
		FWD			0.050		°C /W
R_{25}	Rated resistance	T_C=25°C			5.0		kΩ
△R/R	Deviation of R100	T_C=100°C, R_{100}=493 W		-5		5	%
P_{25}	Power dissipation	T_C=25°C				20	mW
$B_{25/50}$	B-value	$R_2=R_{25}\exp[B_{25/50}(1/T_2-1/(298,15\ K))]$			3375		K
$B_{25/80}$	B-value	$R_2=R_{25}\exp[B_{25/80}(1/T_2-1/(298,15\ K))]$			3411		K
$B_{25/100}$	B-value	$R_2=R_{25}\exp[B_{25/100}(1/T_2-1/(298,15\ K))]$			3433		K
L_{sCE}	Stray inductance module				20		nH
$R_{CC'+EE'}$	Module lead resistance, terminals - chip	T_C=25°C ， per switch			1.10		mΩ
W_t	Weight					345	g
Outline	465H3						



output characteristic IGBT,Inverter (typical)



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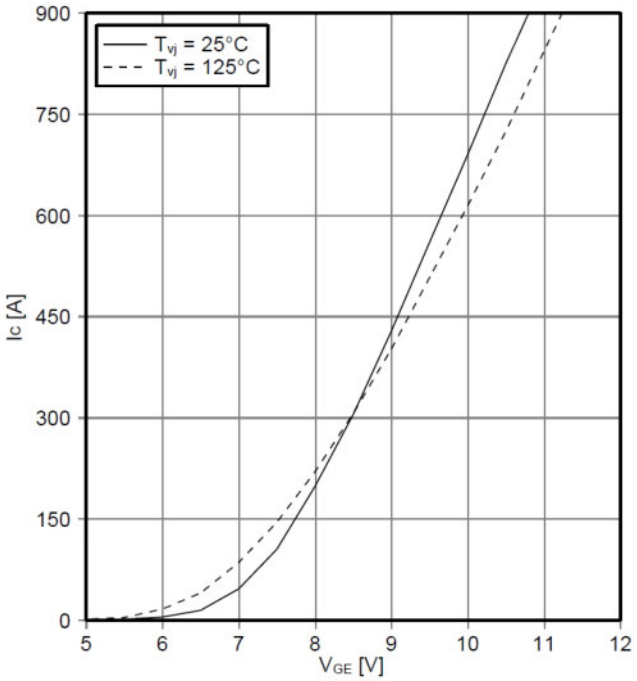
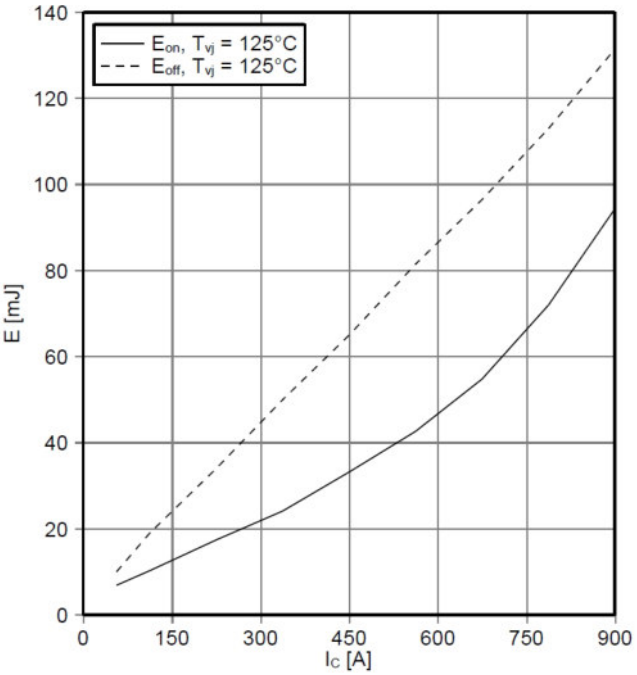
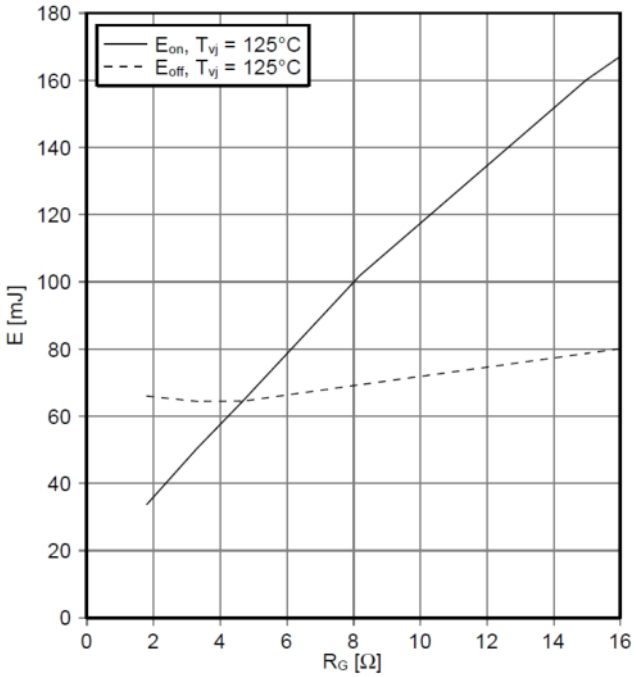


transfer characteristic IGBT,Inverter(typical)



switching losses IGBT,Inverter (typical)



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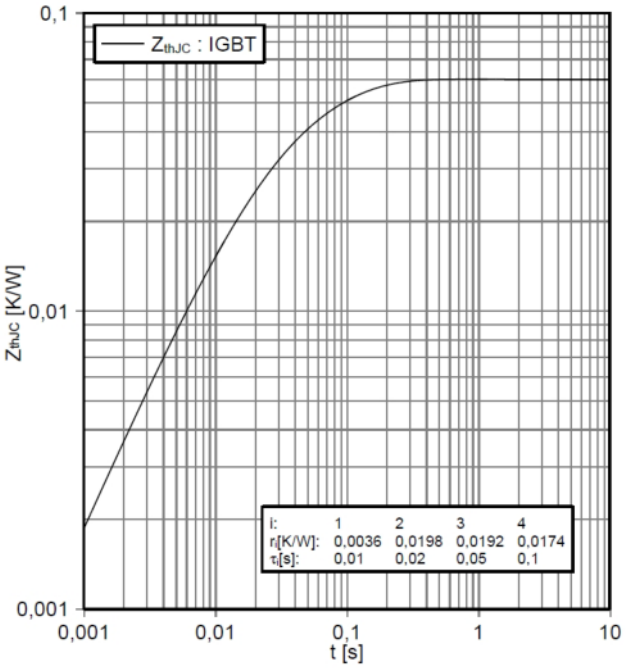
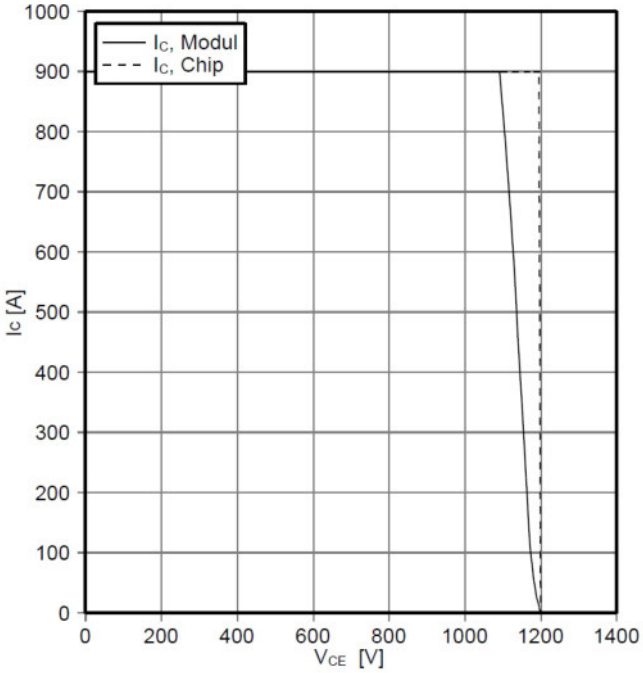
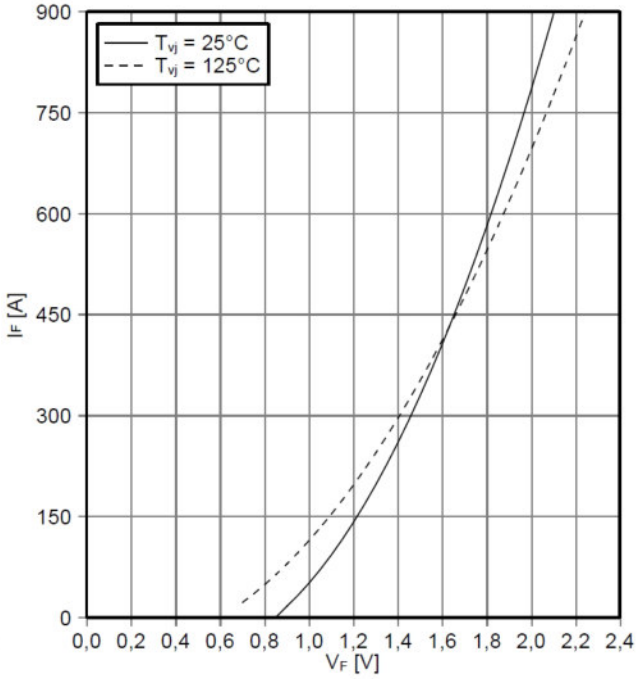


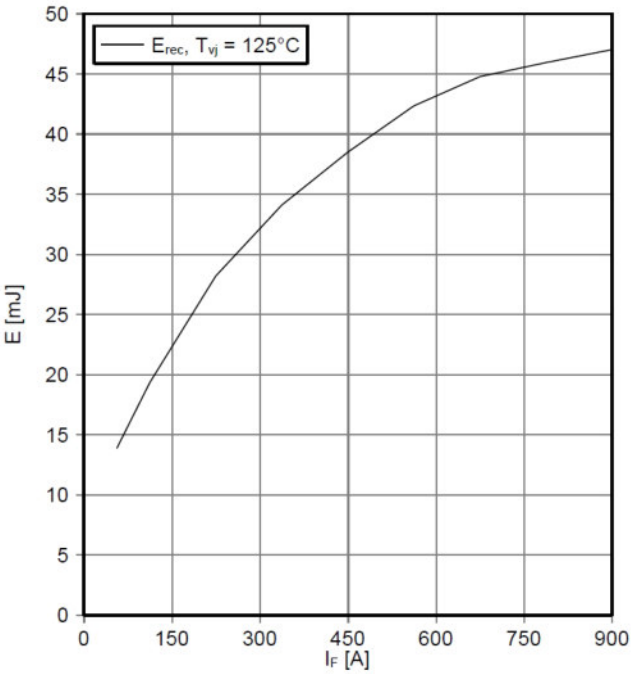
transient thermal impedance IGBT,Inverter



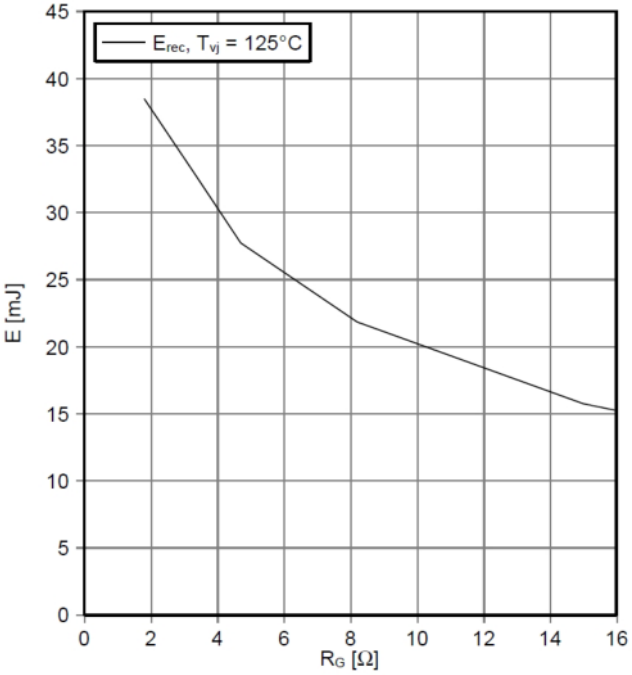
reverse bias safe operating area IGBT,Inverter (RBSOA)



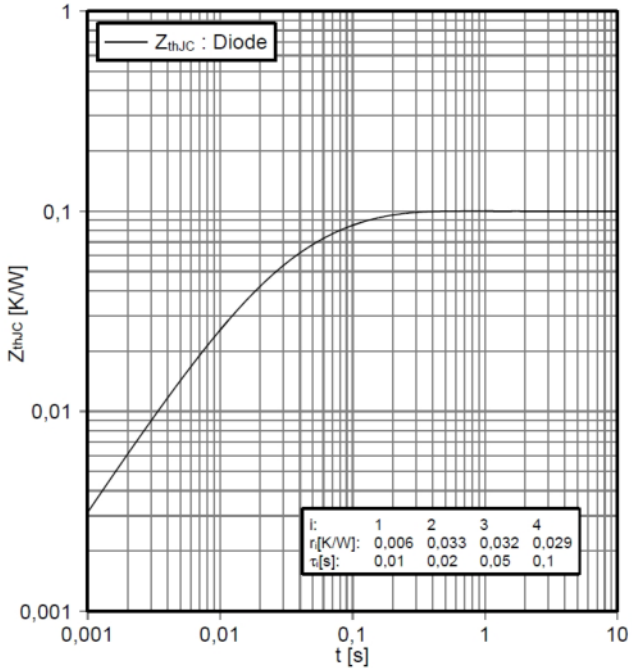
forward characteristic of Diode, Inverter (typical)



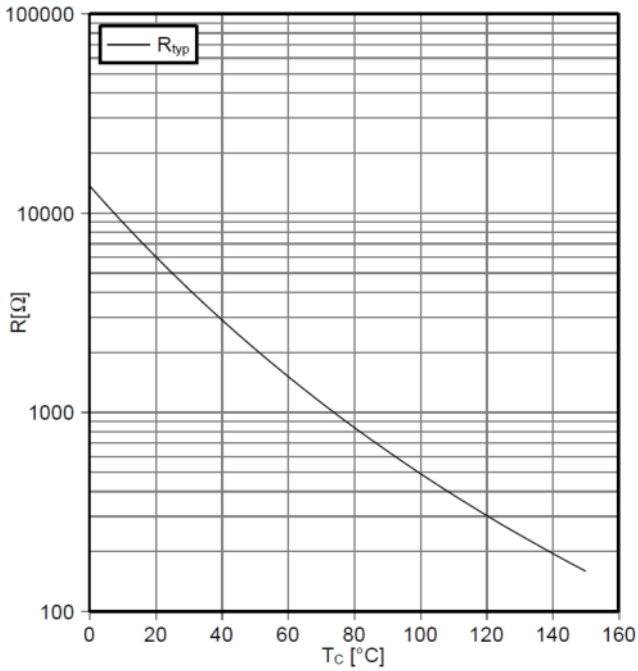
switching losses Diode, Inverter (typical)



switching losses Diode, Inverter (typical)

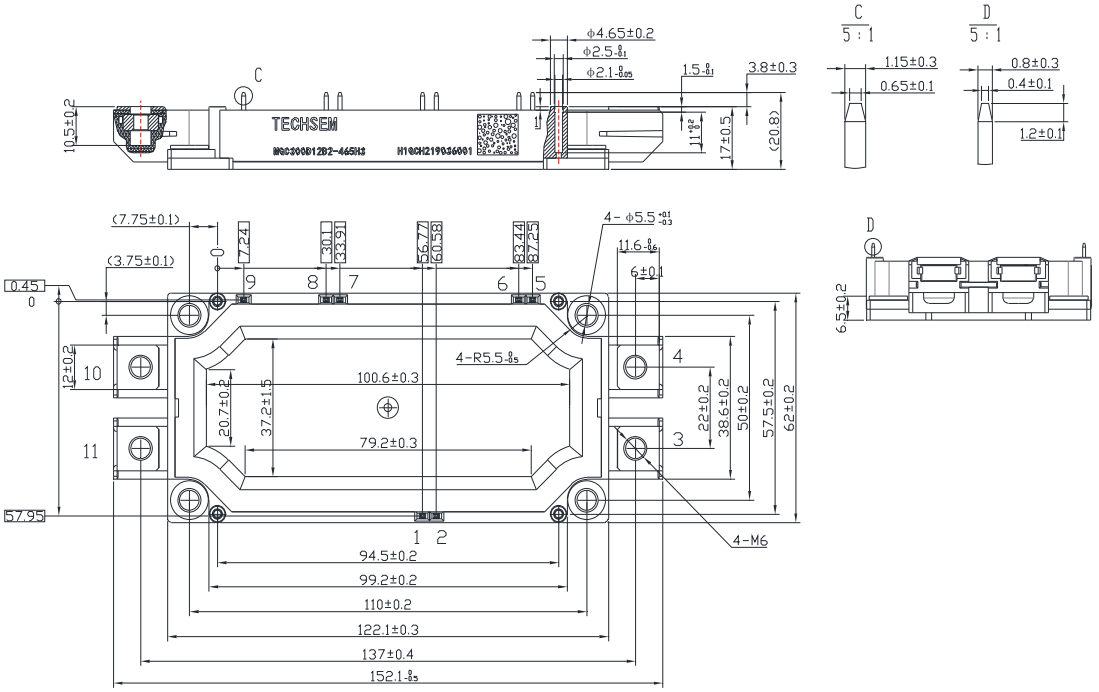


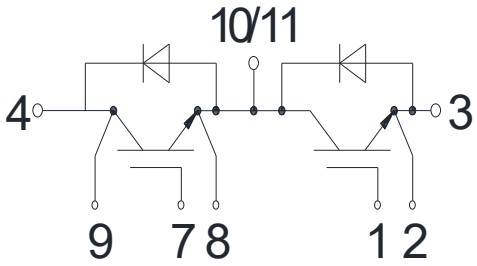
transient thermal impedance Diode, Inverter

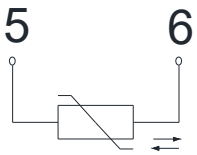


NTC- Thermistor- temperature characteristic (typical)

Outline:







S.CO.M.E.S. srl Via Enrico Mattei,6/8 26823 Castiglione d'Adda(LO)-IT
Phone:+39 0377 901243 Fax:+39 0377 900206