

Features :

- VCE(sat) with positive temperature coefficient
- Low VCE(sat) Trench IGBT technology
- Maximum junction temperature 175°C
- 10µs short circuit capability
- Low inductance case
- Fast & soft reverse recovery anti-parallel FWD
- Isolated copper baseplate using DBC technology

Typical Applications :

- Inverter for motor drive
- AC and DC servo drive amplifier
- Uninterruptible power supply

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min	Type	Max	
V _{CES}	Collector-Emitter voltage	T _j =25°C			1700	V
V _{GES}	Gate-Emitter voltage	T _j =25°C			±20	V
I _c	Collector current	Continuous @T _c =25°C			168	A
		Continuous @T _c =100°C			100	A
I _{CM}	Repetitive Peak Collector Current	t _p =1ms			200	A
P _c	Collector power dissipation	T _j =175°C			632	W
T _j	Junction temperature	/	-40		150	°C
T _{stg}	Storage temperature	/	-40		125	°C
V _{iso}	Isolation between terminal and copper base	f =50Hz, AC: 1minute	4000			V
Screw torque	Mounting(M6)	/	3.5		5.0	N·m
	Terminals(M5)	/	2.4		3.0	N·m
I _{CES}	Zero gate voltage collector current	T _j =25°C ,V _{CE} = V _{CES} , V _{GE} =0V			5.0	mA
I _{GES}	Gate-Emitter leakage current	T _j =25°C ,V _{CE} =0V, V _{GE} =±20V			400	nA
V _{GE(th)}	Gate-Emitter threshold voltage	T _j =25°C ,V _{CE} = V _{GE} , I _c =4mA	5.6	6.2	6.8	V
V _{CES(sat)}	Collector-Emitter saturation voltage	T _j =25°C ,V _{GE} =15V, I _c =100A		1.85	2.20	V
		T _j =125°C ,V _{GE} =15V, I _c =100A		2.25		V
t _{on}	Turn-on time	V _{CC} =900V, I _c =100A, V _{GE} =±15V, R _G =4.8Ω, Inductive load	T _j =25°C		218	ns
			T _j =125°C		238	ns
T _j =25°C				31	ns	
T _j =125°C				44	ns	
t _{off}	Turn-off time	V _{CC} =900V, I _c =100A, V _{GE} =±15V, R _G =4.8Ω, Inductive load	T _j =25°C		797	ns
			T _j =125°C		1140	ns
T _j =25°C				363	ns	
T _j =125°C				637	ns	
V _F	Forward on voltage	T _j =25°C ,I _F =100A		1.80	2.25	V
		T _j =125°C ,I _F =100A		1.90		V
t _{rr}	Reverse recovery time	T _j =125°C ,I _F =100A		1.16		µs
		T _j =25°C ,I _F =100A		0.89		µs
R _{th(j-c)}	Thermal resistance(1 device)	IGBT			0.160	°C/W
		Diode			0.268	°C/W
W _t	Weight				150	g
Outline	M37a					

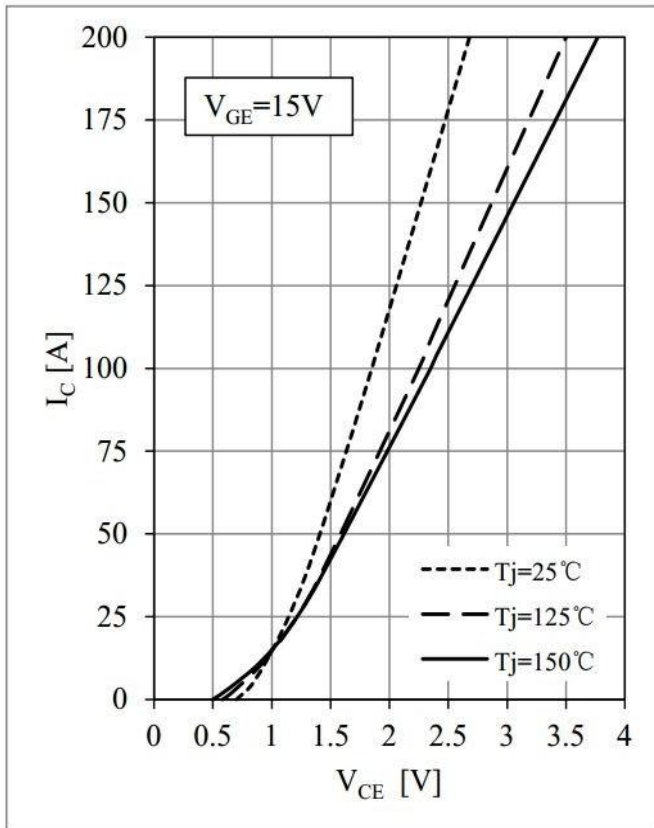


Fig 1. IGBT Output Characteristics

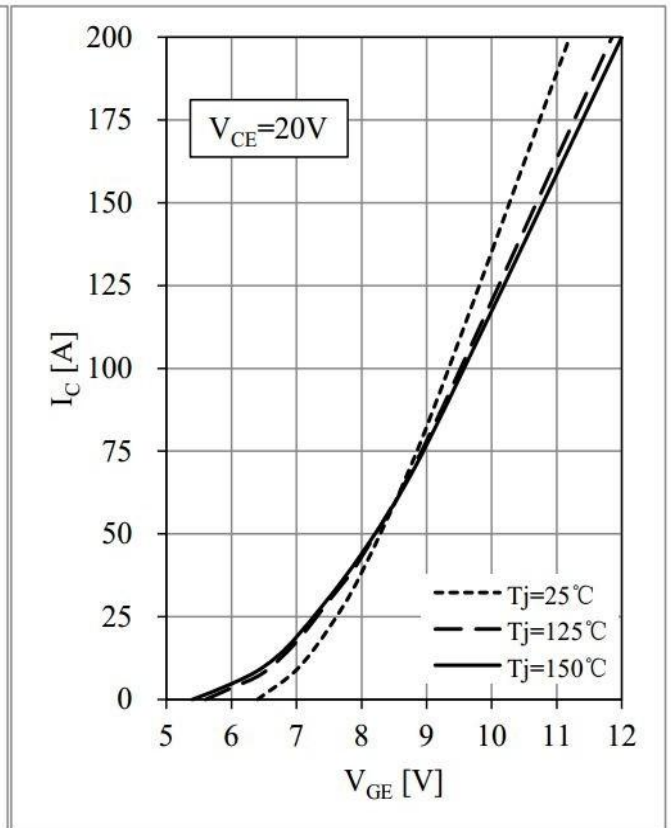


Fig 2. IGBT Transfer Characteristics

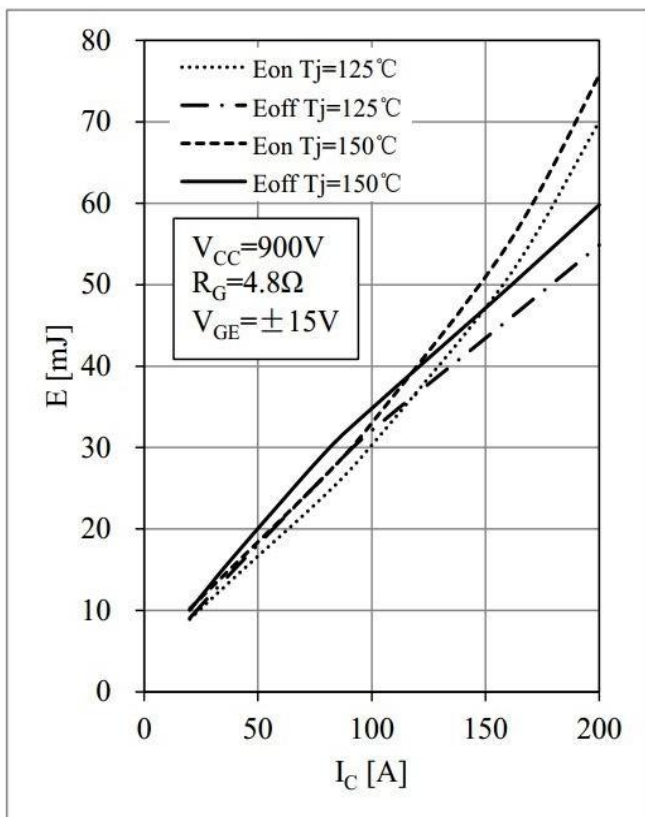


Fig 3. IGBT Switching Loss vs. I_C

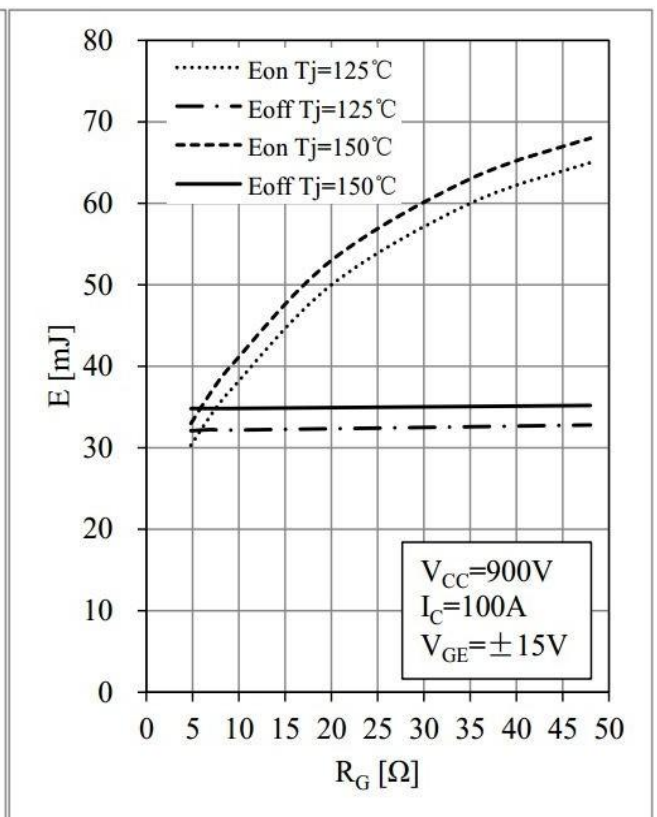


Fig 4. IGBT Switching Loss vs. R_G

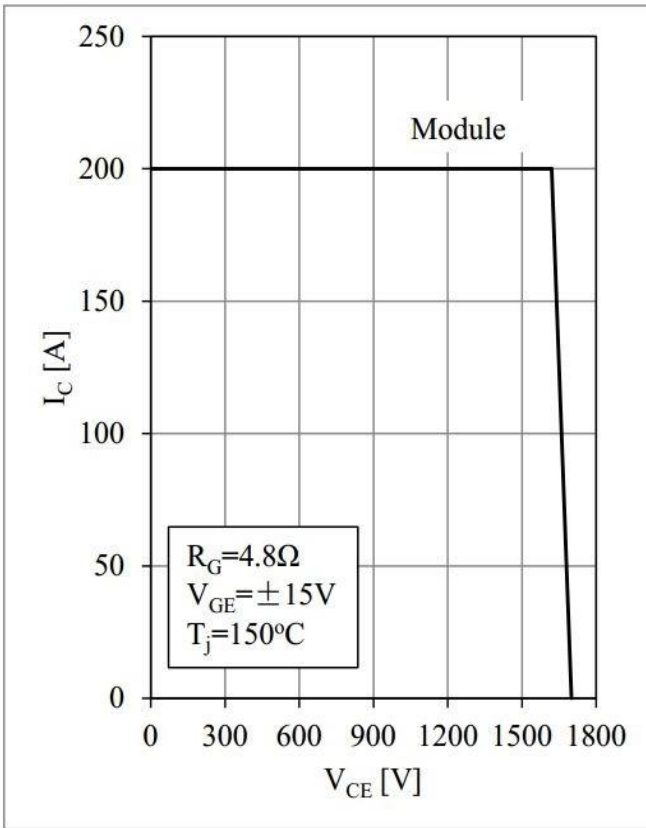


Fig 5. RBSOA

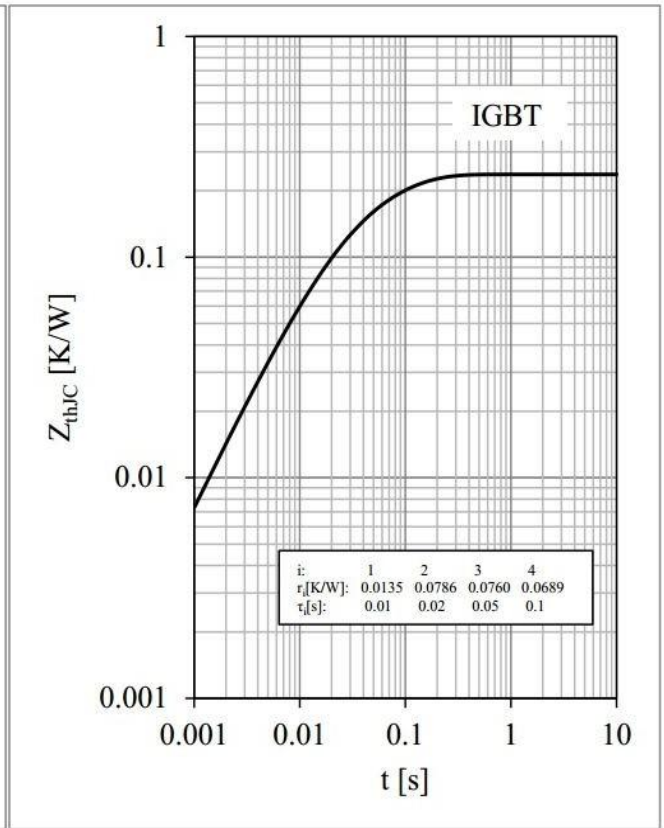


Fig 6. IGBT Transient Thermal Impedance

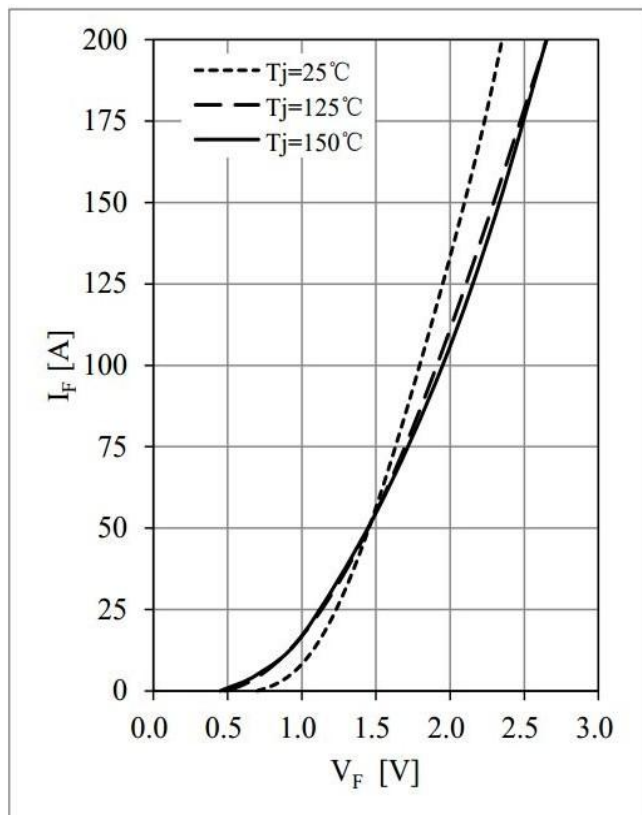


Fig 7. Diode Forward Characteristics

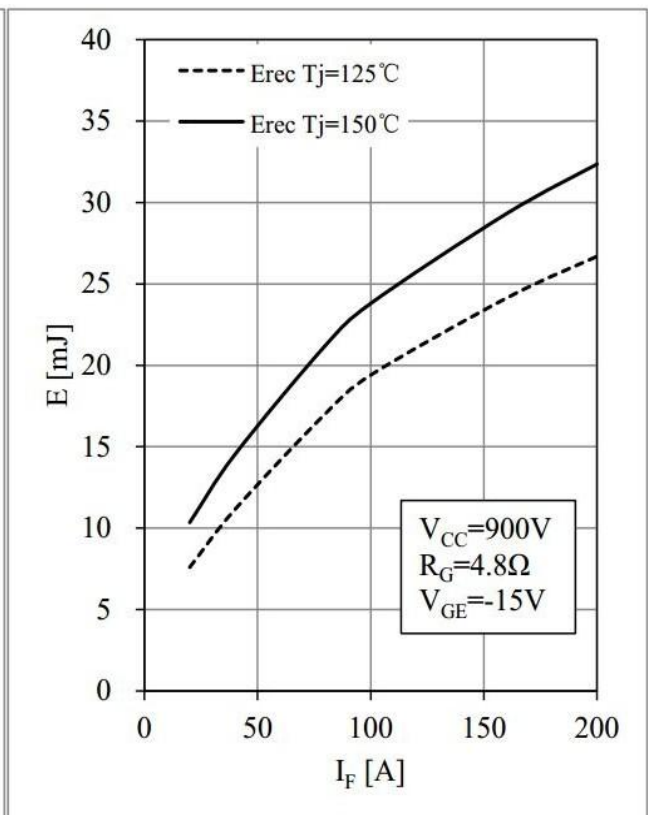


Fig 8. Diode Switching Loss vs. I_F

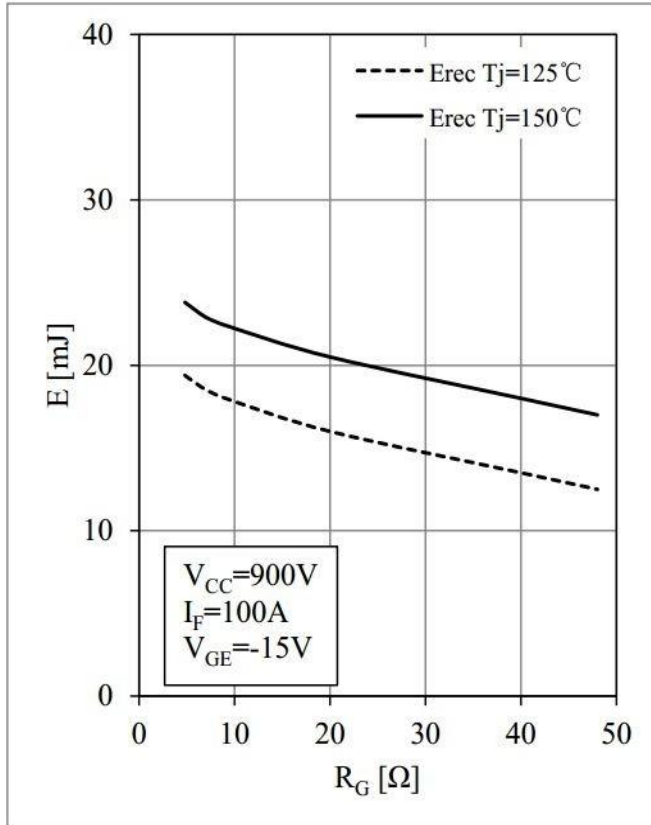


Fig 9. Diode Switching Loss vs. R_G

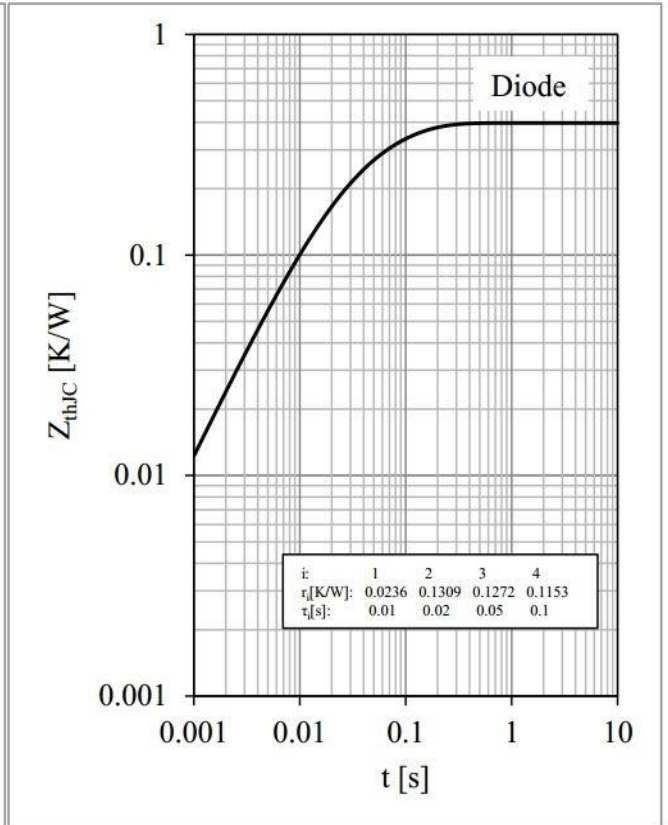
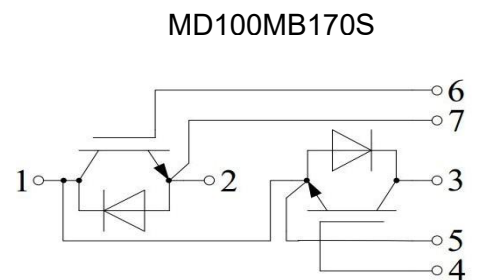
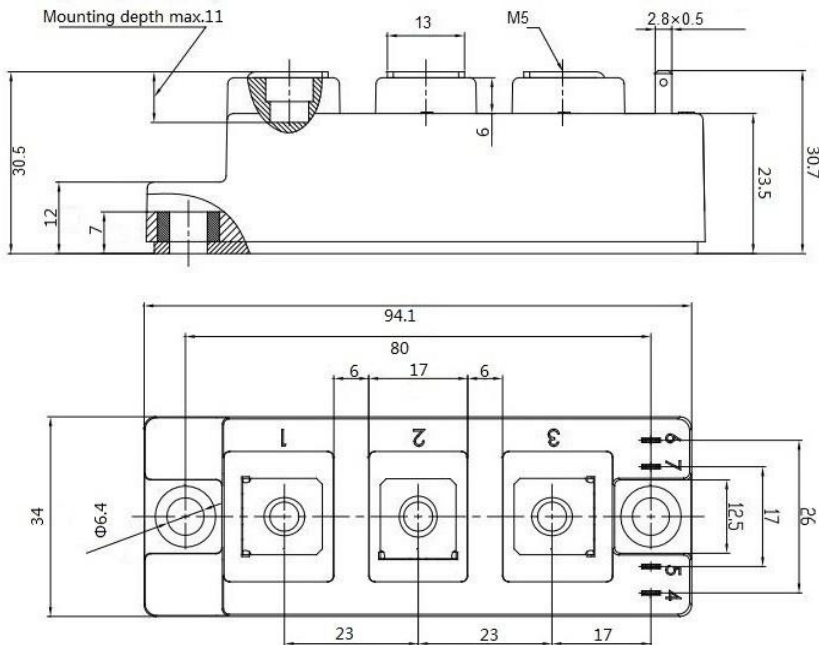


Fig 10. Diode Transient Thermal Impedance

Outline & Circuit Diagram



Unmarked dimensional tolerance : $\pm 0.5\text{mm}$