Features：

- **n** Low $V_{CE(sat)}$ trench IGBT technology
- **n** Low switching losses
- **n** 10μs short circuit capability
- **n** $V_{CE(sat)}$ with positive temperature coefficient

Typical Applications：

- **n** AC inverter drives mains 575-750V AC
- **n** Public transport (auxiliary syst.)

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=80°C			75	A
I_{CP}		T_P=1ms			150	A
P_D	Maximum Power Dissipation	T_j=175°C ,1 device			600	W
T_j	Junction temperature	/			175	℃
T_{stg}	Storage temperature	/	-40		125	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute	4000			V
Screw torque	Mounting(M5)	/	2.5		5.0	N·m
	Terminals(M6)	/	3.0		5.0	N·m
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1700V，V_{GE}=0V			3.0	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=3mA	5.2	5.8	6.4	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=75A		2.0		V
		T_j=125°C ,V_{GE}=15V，I_C=75A		2.4		V
R_{Gint}	Internal gate resistor	T_j=25°C		8.5		Ω
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V，V_{GE}=0V，f=1MHz		6.80		nF
C_{res}	Reverse transfer capacitance			0.22		nF
t_{on}	Turn-on time	T_j=125°C ,V_{CC}=900V，I_C=75A，V_{GE}=±15V，R_g=6.8Ω，Inductive load		400		ns
t_r				50		ns
t_{off}	Turn-off time			800		ns
t_f				300		ns
E_{on}	Turn-on energy loss per pulse			24.0		mJ
E_{off}	Turn-off energy loss per pulse			23.5		mJ
I_{SC}	SC data	V_{GE}=15V, V_{CC}=1000V, t_{sc}≤10μs, T_{vj}=125°C, V_{CEM}≤1700V		300		A
tsc	Short circuit withstand time	T_j=125°C	10			μs

V_F	Forward on voltage	T_j=25°C ,I_F=75A		1.80		V
		T_j=125°C ,I_F=75A		1.90		V
I_{RM}	Peak reverse recovery current	I_F=75A, -diF/dt=1800 A/μs , V_R=900V, V_{GE}=-15V, T_j=125°C		125		A
Q_r	Recovered charge			36.5		μC
E_{rec}	Reverse recovery energy			20.5		mJ
$R_{th(j-c)}$	Thermal resistance(1 device)	IGBT			0.25	℃/W
		FWD			0.46	℃/W
$R_{th(c-f)}$	Contact thermal resistance (1 device)	With thermal compound		0.050		℃/W
W_t	Weight				150	g
Outline	251H3P					

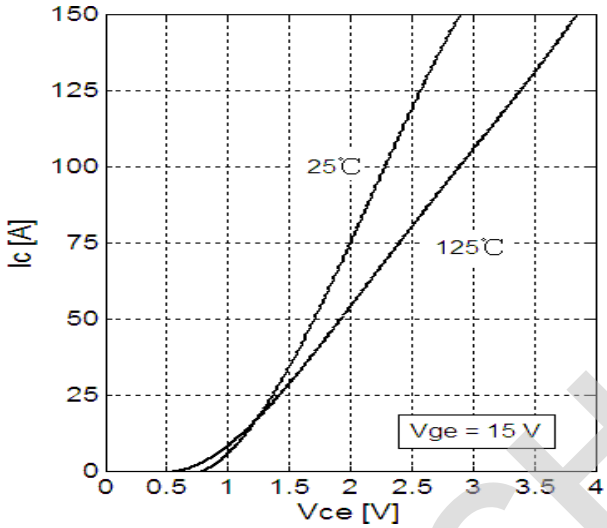

Fig 1. IGBT Typical Output Characteristics

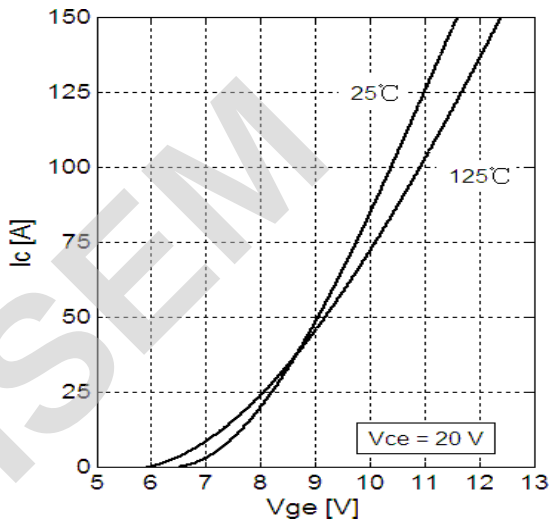

Fig 2. IGBT Typical Transfer Characteristics

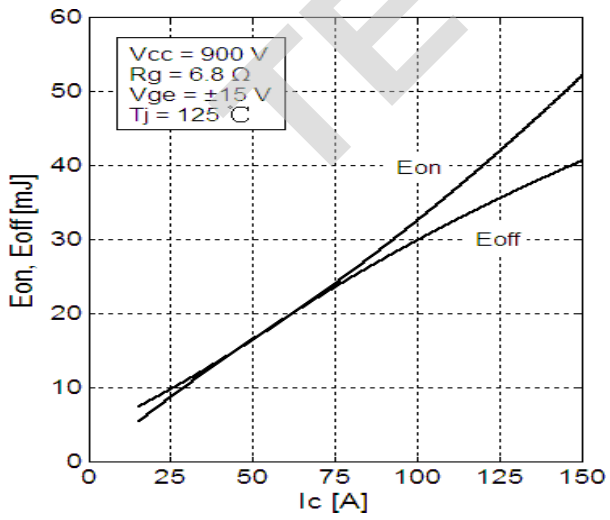

Fig 3. IGBT Switching Loss vs. Collector Current

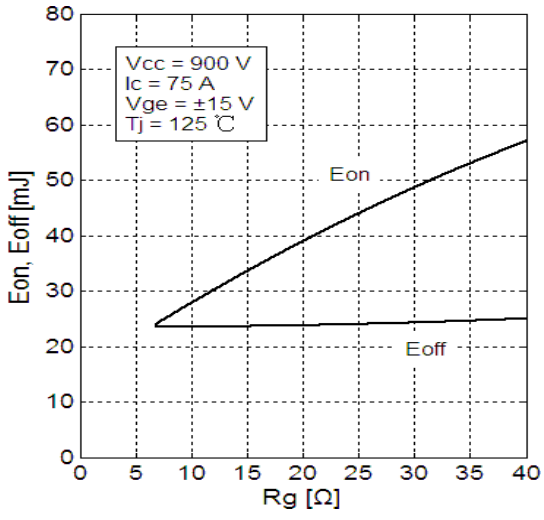

Fig 4. IGBT Switching Loss vs. Gate Resistor

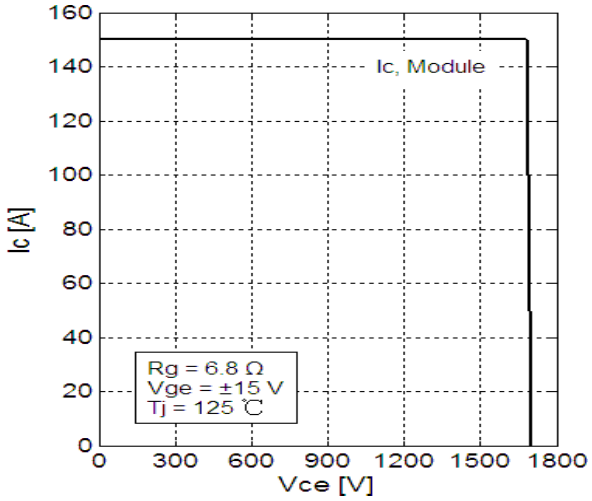

Fig 5. RBSOA

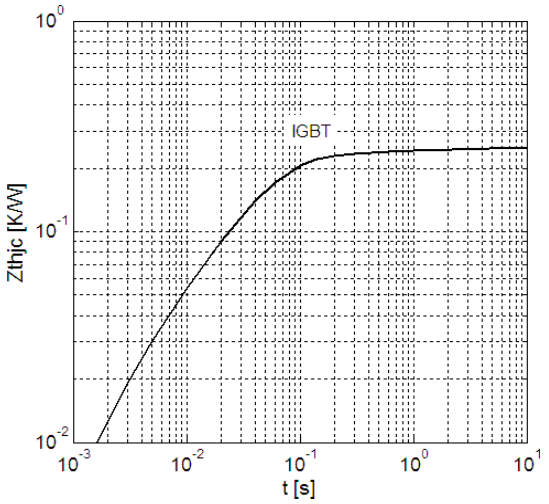

Fig 6. IGBT Transient Thermal Impedance

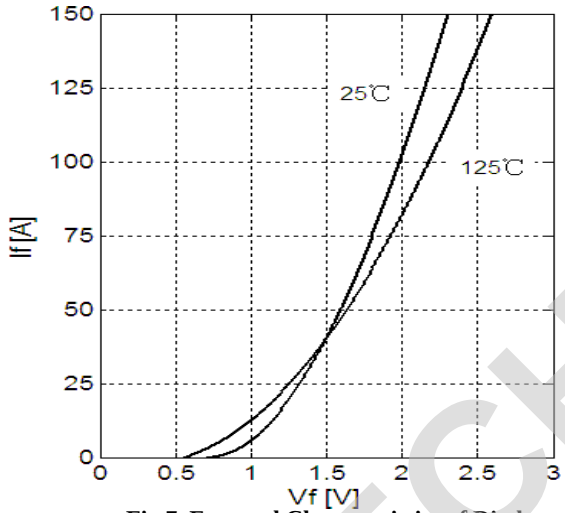

Fig 7. Forward Characteristics of Diode

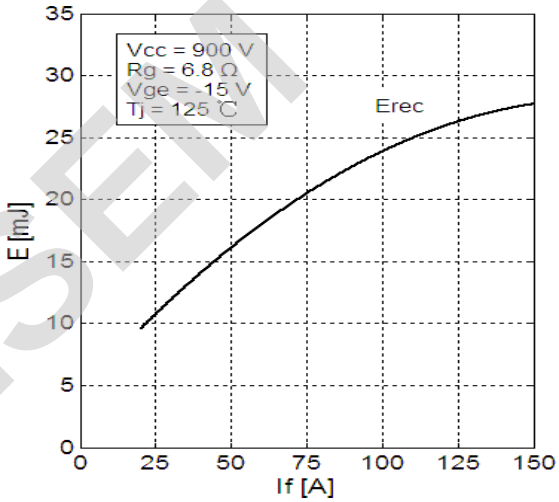

Fig8. Diode Switching Loss vs. Collector Current

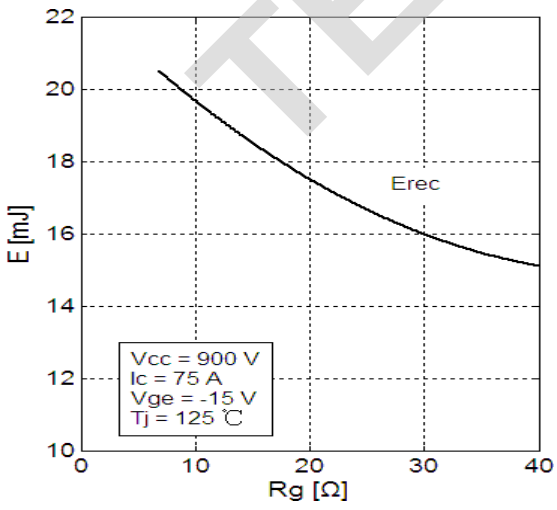

Fig9. Diode Switching Loss vs. Gate Resistor

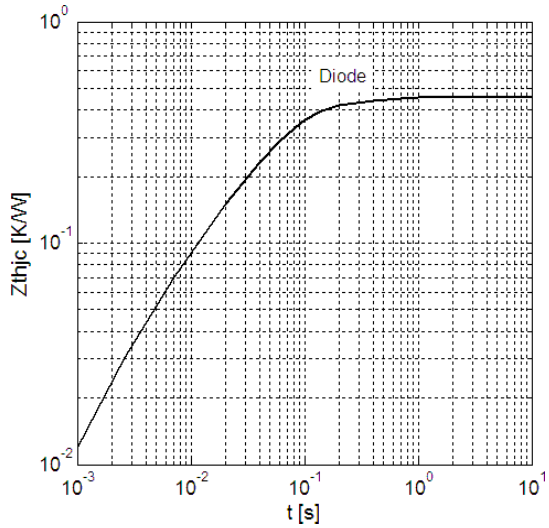

Fig 10. Diode Transient Thermal Impedance

Outline & Circuit Diagram