

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

- Low $V_{CE(sat)}$ Trench-FS IGBT technology
- Maximum junction temperature 175
- Positive temperature coefficient
- Including fast & soft recovery anti-parallel FWD
- High short circuit capability(10us)

Collector-Emitter Breakdown Voltage	V_{CE}	1200	V
DC Collector Current, limited by T_{jmax} $T_C= 25^{\circ}C$ $T_C= 100^{\circ}C$	I_C	50 25	A
Diode Forward Current, limited by T_{jmax} $T_C= 25^{\circ}C$ $T_C= 100^{\circ}C$	I_F	50 25	A
Continuous Gate-Emitter Voltage	V_{GE}	± 20	V
Transient Gate-Emitter Voltage	V_{GE}	± 30	V
Turn off Safe Operating Area V_{CE} 1200V, T_j 150°C		100	A
Pulsed Collector Current, $V_{GE}=15V$, tp limited by T_{jmax}	I_{CM}	100	A
Diode Pulsed Current, tp limited by T_{jmax}	I_{Fpuls}	100	A
Short Circuit Withstand Time, $V_{GE}= 15V$, $V_{CC}=900V$ V_{CEM} 1200V	T_{sc}	10	μs
Power Dissipation , $T_j=175^{\circ}C$, $T_C=25^{\circ}C$	P_{tot}	326	W
Operating Junction Temperature	T_j	-40...+175	$^{\circ}C$
Storage Temperature	T_s	-55...+150	$^{\circ}C$
Soldering Temperature, wave soldering 1.6mm (0.063in.) from case for 10s		260	$^{\circ}C$



$T_j = 25$ unless otherwise specified

Collector-Emitter Breakdown Voltage	BV _{CES}	V _{GE} =0V, I _C =250μA	1200		-	V
Gate Threshold Voltage	V _{GE(th)}	V _{GE} =V _{CE} , I _C =0.8mA	5.1	5.8	6.4	V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	V _{GE} =15V, I _C =25A T _J =25°C, T _J =125°C T _J =150°C		1.85 2.20 2.30	2.35	V
Zero Gate Voltage Collector Current	I _{CES}	V _{CE} =1200V, V _{GE} =0V T _J = 25°C, T _J =150°C			0.25 5.00	mA
Gate-Emitter Leakage Current	I _{GES}	V _{CE} = 0V, V _{GE} = ± 20V			100	nA

Input Capacitance	C _{ies}	V _{CE} = 25V, V _{GE} = 0V, f = 1MHz	-	1.45	-	nF
Reverse Transfer Capacitance	C _{res}		-	0.05	-	
Gate Charge	Q _G	V _{CC} =960V, I _C =25A, V _{GE} =15V	-	0.20	-	μC
Short Circuit Collector Current	I _{SC}	V _{GE} =15V, t _{sc} 10μs, V _{CC} =900V, T _J 150°C	-	110	-	A

Operating Junction Temperature	T _J	-40...+175	°C
Storage Temperature	T _S	-55...+150	°C
Soldering Temperature, wave soldering 1.6mm (0.063in.) from case for 10s		260	°C



T_j= 25 unless otherwise specified

Diode Forward Voltage	V _F	I _F = 25A T _J = 25°C, T _J = 125°C T _J = 150°C		2.00 1.80 1.70		V

°C						
Turn-on Delay Time	t _{d(on)}	V _{CC} = 600V, I _C =25A, V _{GE} = -15v~15V, R _g =18	-	158	-	ns
Rise Time	t _r		-	32	-	ns
Turn-on Energy	E _{on}		-	1.8	-	mJ
Turn-off Delay Time	t _{d(off)}		-	331	-	ns
Fall Time	t _f		-	83	-	ns
Turn-off Energy	E _{off}		-	1.4	-	mJ
°C						
Turn-on Delay Time	t _{d(on)}	V _{CC} = 600V, I _C =25A, V _{GE} = -15v~15V, R _g =18	-	172	-	ns
Rise Time	t _r		-	45	-	ns
Turn-on Energy	E _{on}		-	2.4	-	mJ
Turn-off Delay Time	t _{d(off)}		-	154	-	ns
Fall Time	t _f		-	212	-	ns
Turn-off Energy	E _{off}		-	2.2	-	mJ
°C						
Turn-on Delay Time	t _{d(on)}	V _{CC} = 600V, I _C =25A, V _{GE} = -15v~15V, R _g =18	-	190	-	ns
Rise Time	t _r		-	48	-	ns
Turn-on Energy	E _{on}		-	2.8	-	mJ
Turn-off Delay Time	t _{d(off)}		-	165	-	ns
Fall Time	t _f		-	230	-	ns
Turn-off Energy	E _{off}		-	2.4	-	mJ



°C						

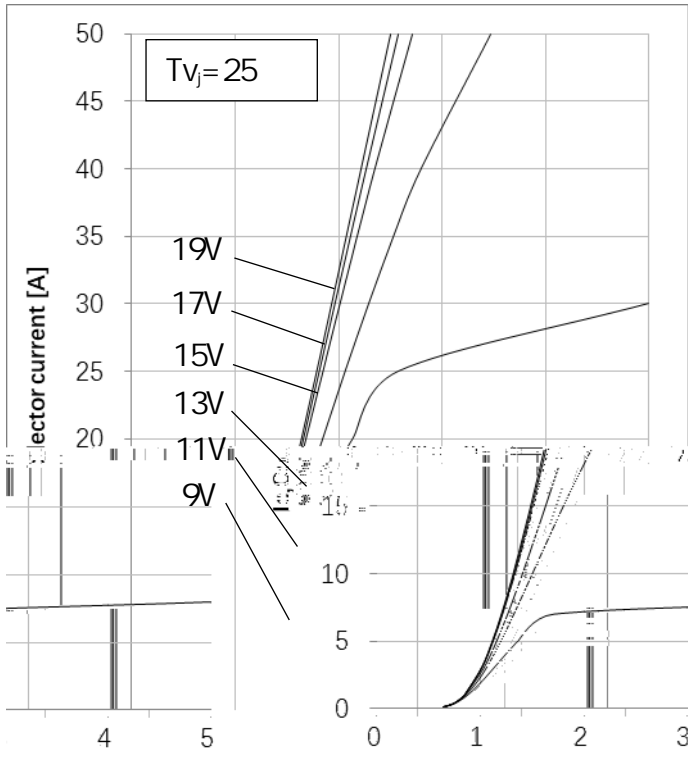


Fig1. Typical transfer characteristic

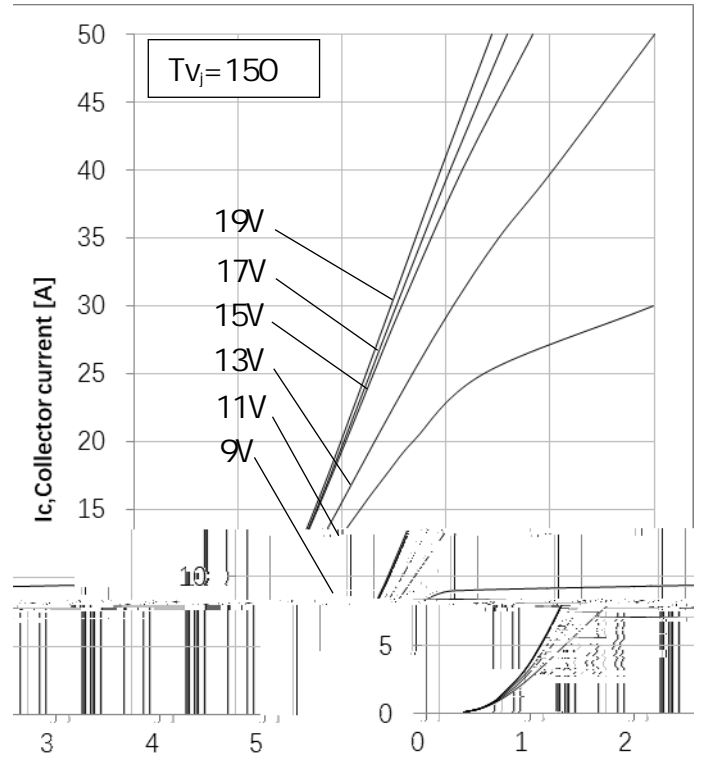


Fig2. Typical output characteristic

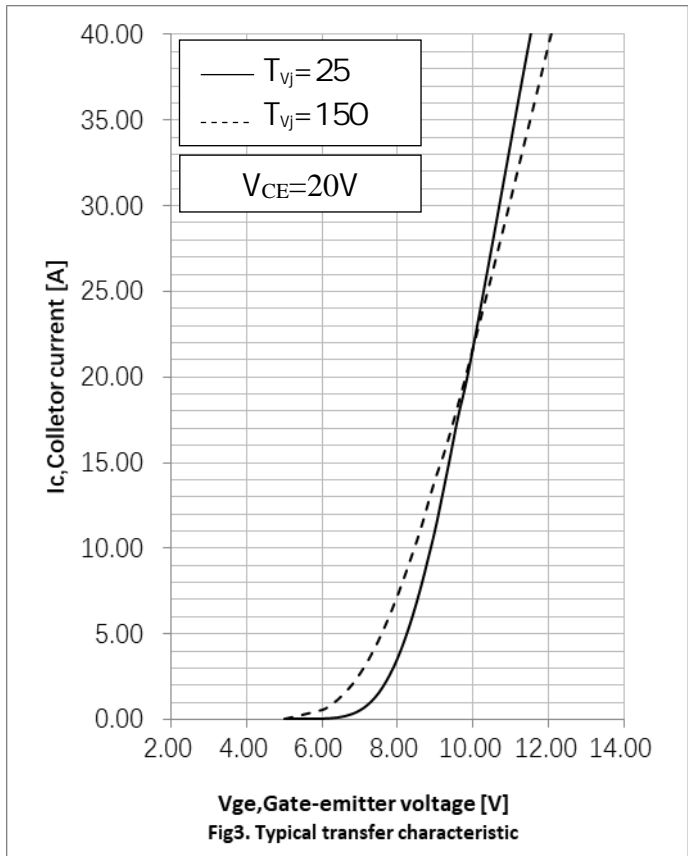


Fig3. Typical transfer characteristic

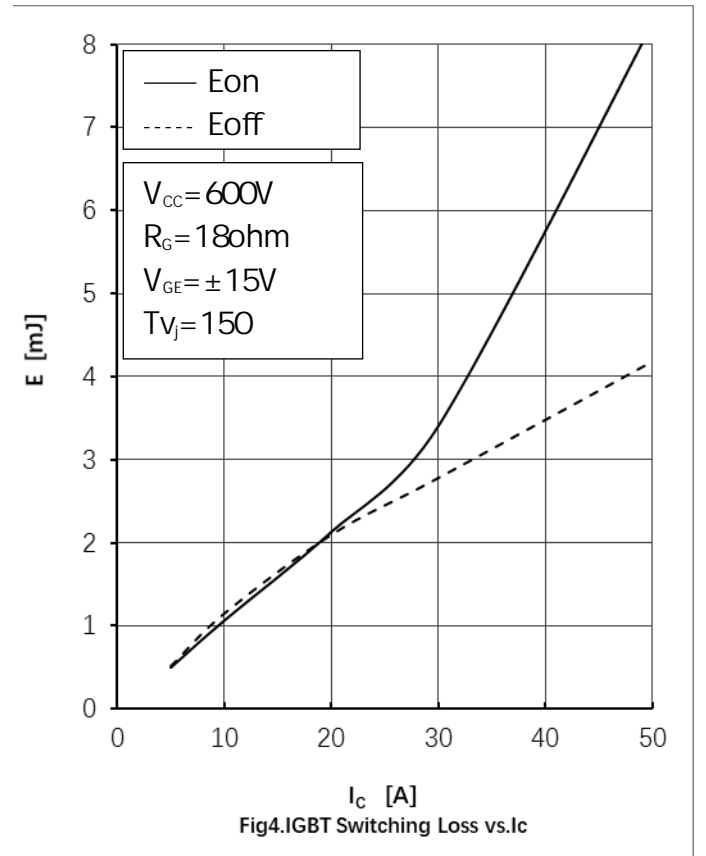
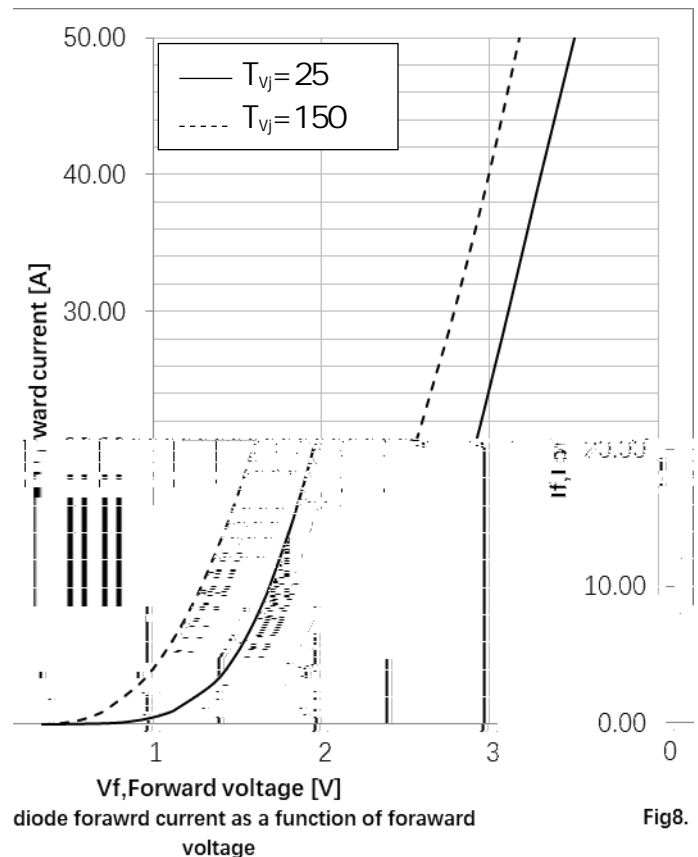
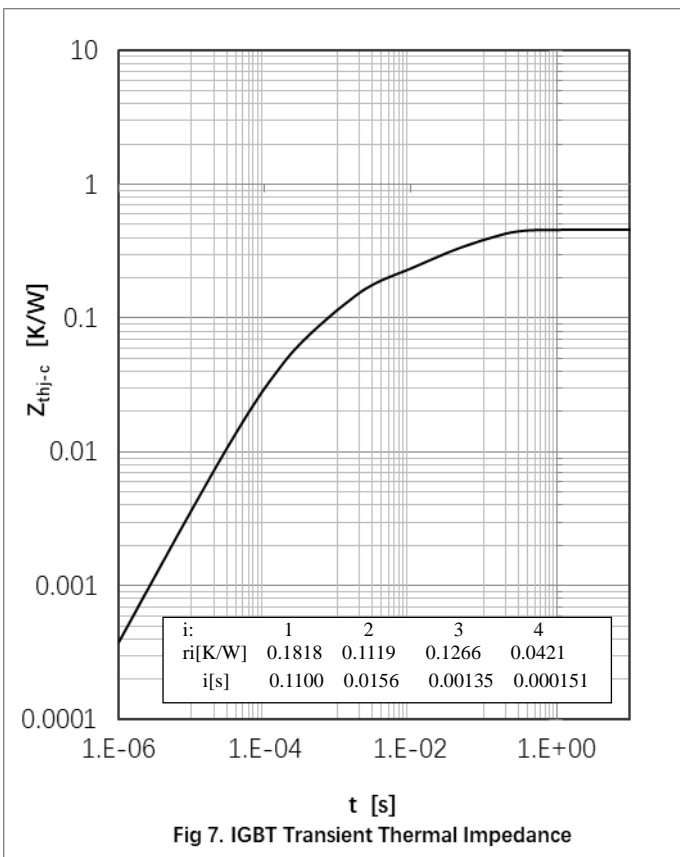
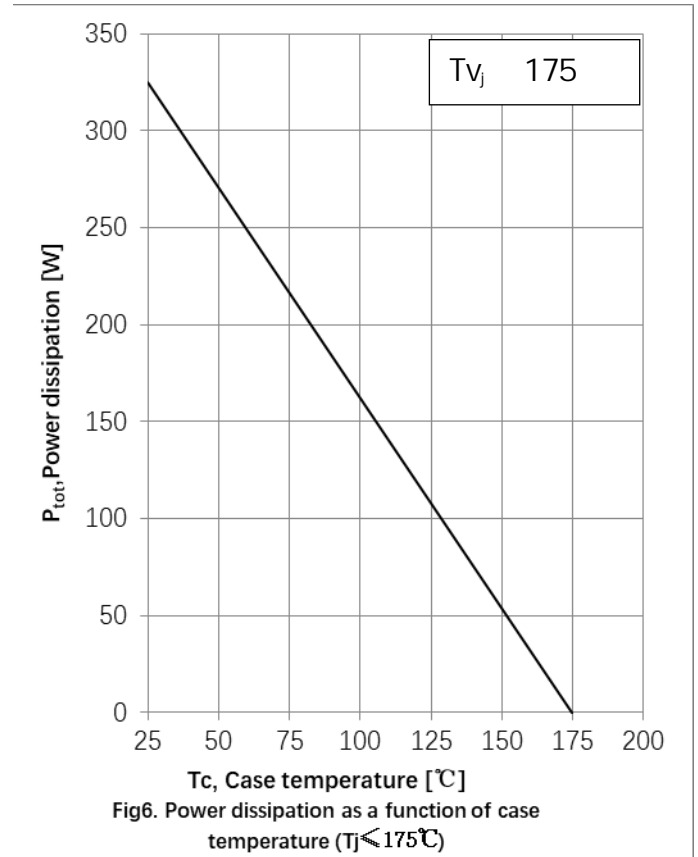
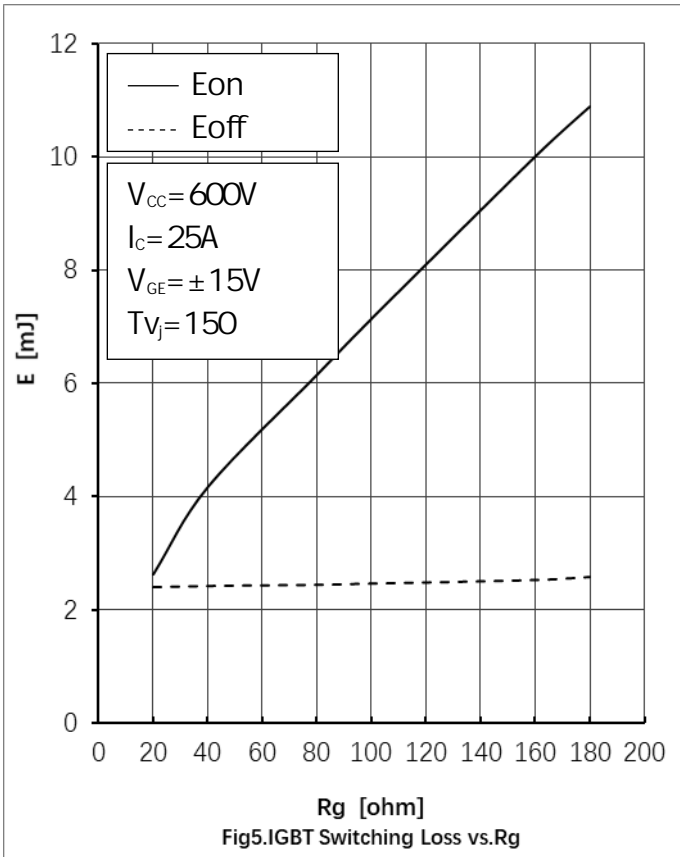


Fig4. IGBT Switching Loss vs. Ic



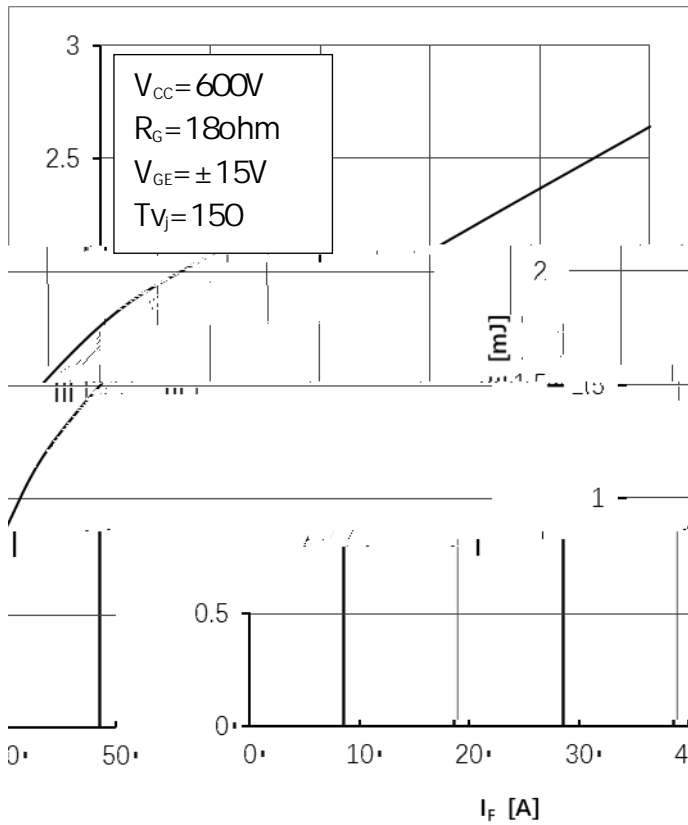
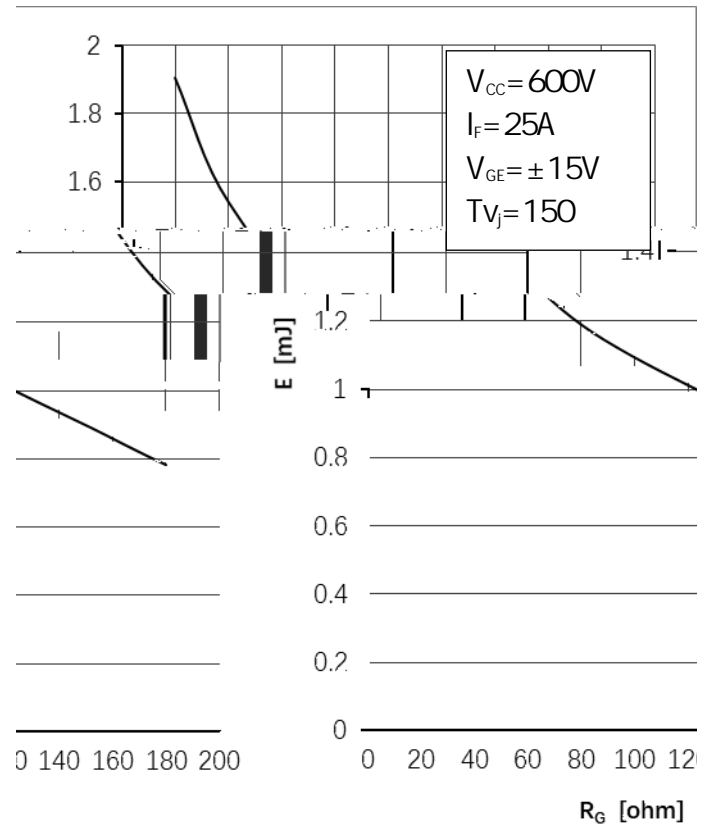


Fig9.Diode Switching Loss(E_{rec}) vs. I_F



E_{rec} vs. R_G

Fig10.Diode Switching Los

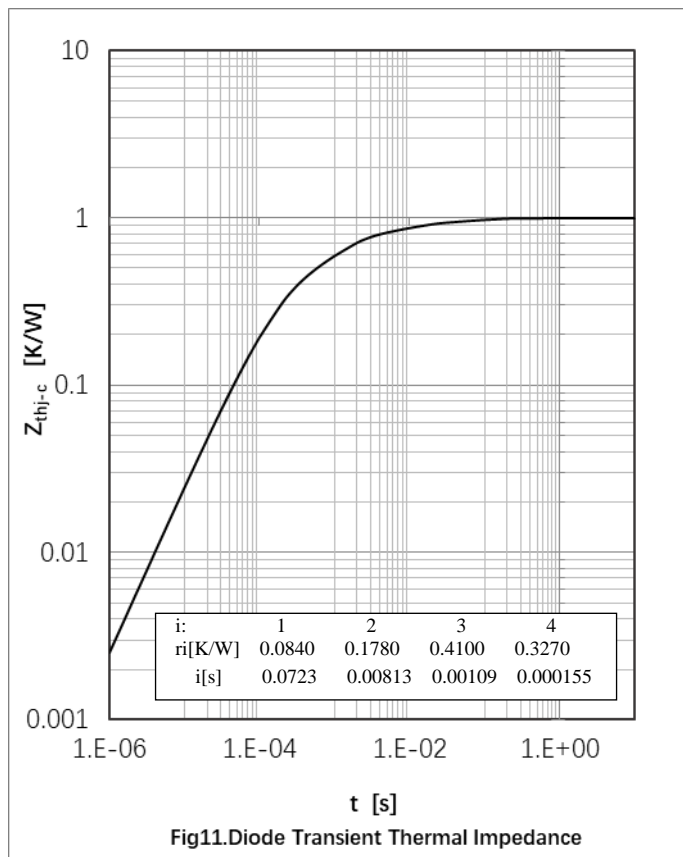


Fig11.Diode Transient Thermal Impedance

