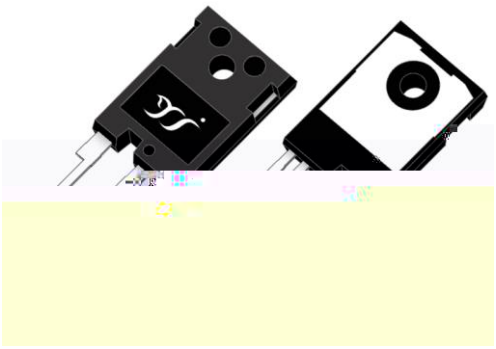
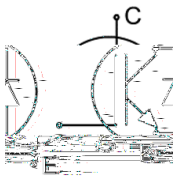
DGZC75N65CTS2A



IGBT Discrete

V_{CE}	650	V
I_C	75	A
$V_{CE(SAT)}$ I_C=75A	1.45	V

Circuit



Applications

Resonant converters
Uninterruptible power supplies
Welding converters
Mid to high range switching frequency converters

Features

High speed smooth switching device for hard & soft switching
Maximum junction temperature 175
Positive temperature coefficient
High ruggedness, temperature stable

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Emitter Breakdown Voltage	V_{CE}	650	V
DC Collector Current, limited by T_{jmax} T_C= 25°C value limited by bondwire T_C= 100°C	I_C	85 80	A
Diode Forward Current, limited by T_{jmax} T_C= 25°C value limited by bondwire T_C= 100°C	I_F	85 80	A
Continuous Gate-Emitter Voltage	V_{GE}	± 20	V
Transient Gate-Emitter Voltage (tp ≤ 10µs,D<0.010)	V_{GE}	± 30	V
Turn off Safe Operating Area V_{CE} 650V, T_j		300	A
Pulsed Collector Current, V_{GE}=15V, tp limited by T_{jmax}	I_{CM}	300	A
Diode Pulsed Current, tp limited by T_{jmax}	I_{Fpuls}	300	A
Power Dissipation , Tj=175°C, Tc=25°C	P_{tot}	428	W

DGZC75N65CTS2A

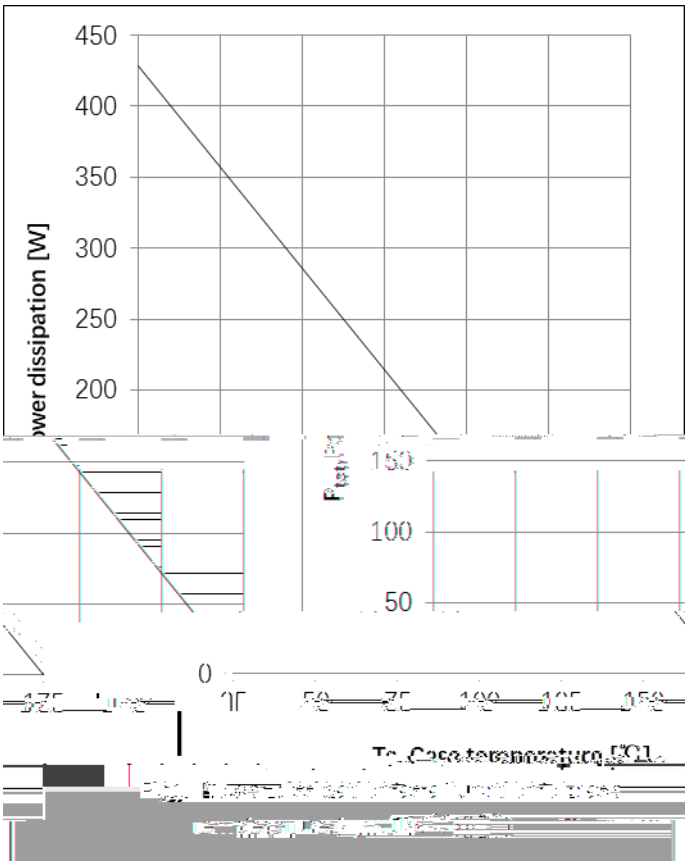
Switching Characteristic, Inductive Load

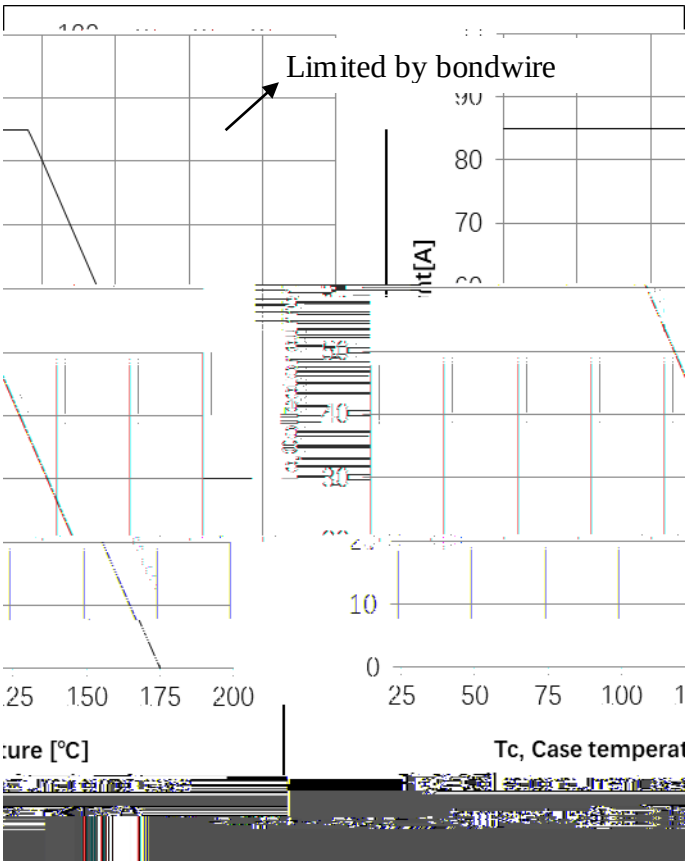
Electrical Characteristics of the DIODE

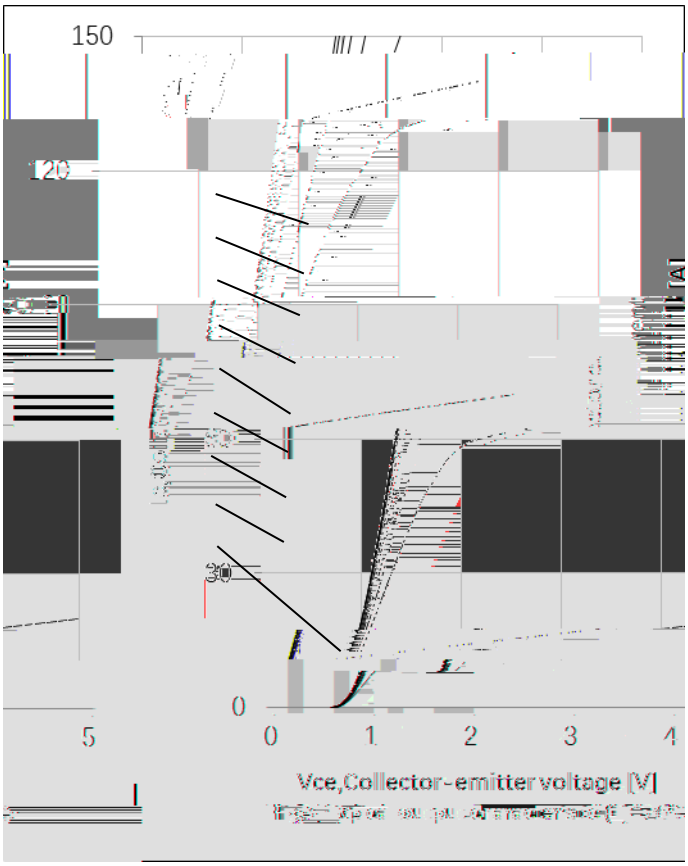
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static						
Diode Forward Voltage	V_F	I_F= 75A T_j= 25°C, T_j= 175°C		1.70 2.60	1.90	V
Diode Capacitive Charge	Q_C	V_R=400V, Tj=25°C		135		nC
Diode Capacitance	C	f=1MHZ V_R=0V, V_R=200V V_R=400V		2453 247 243		pF

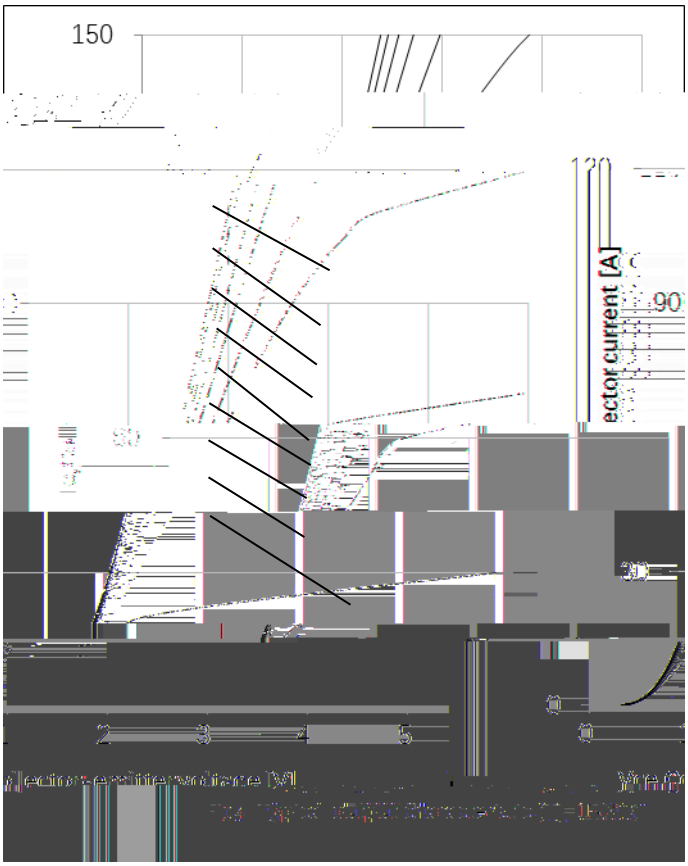
Thermal Resistance

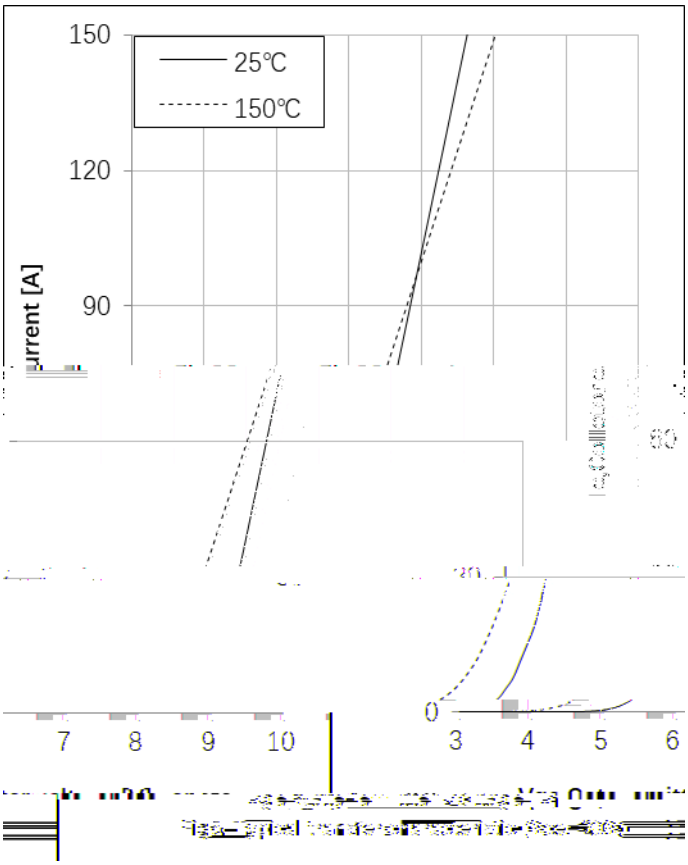
Parameter	Symbol	Max. Value	Unit
IGBT Thermal Resistance, Junction - Case	R_{th}(j-c)	0.35	K/W
Diode Thermal Resistance, Junction - Case	R_{th}(j-c)	0.50	K/W
Thermal Resistance, Junction - Ambient	R_{th}(j-a)	40	K/W

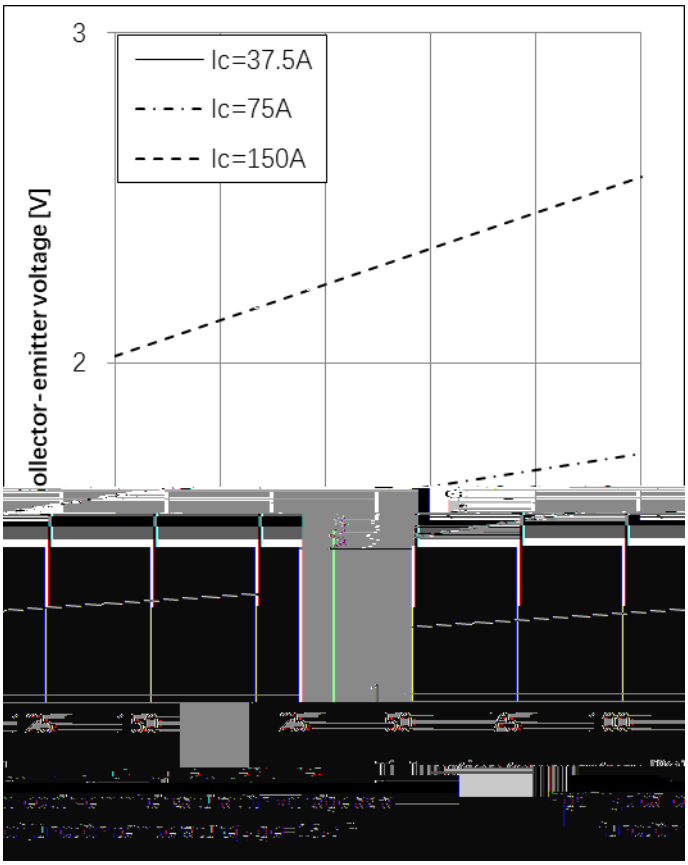

450
400
350
300
250
200
150
100
50
0
Tc, Case temperature [°C]


Limited by bondwire
90
80
70
10
0
25
50
75
100
150
175
200
Tc, Case temperat


150
120
90
30
0
5
0
1
2
3
4
Vce,Collector-emitter voltage [V]


150
120
90
30
0
2
3
4
5





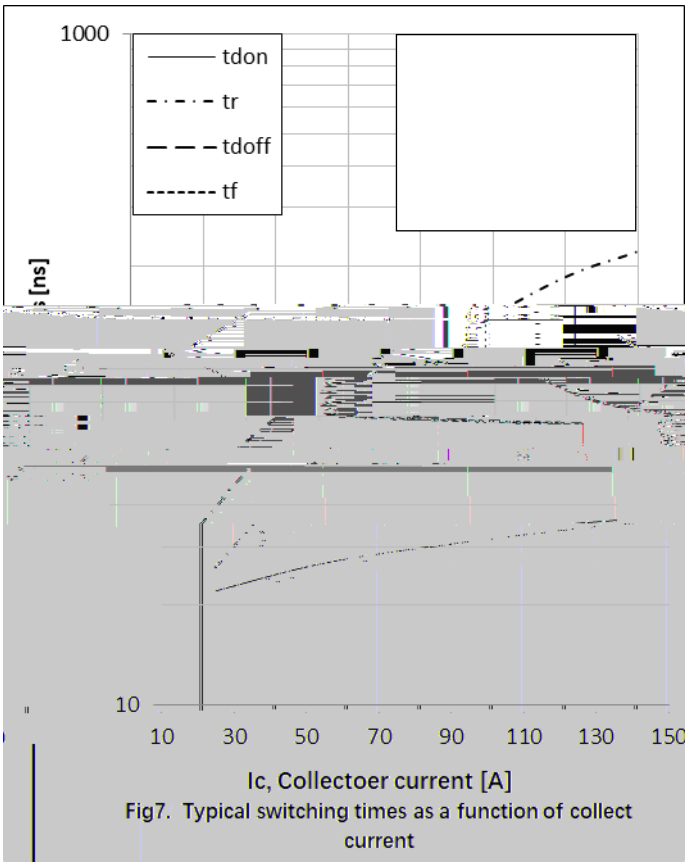


Fig7. Typical switching times as a function of collect current

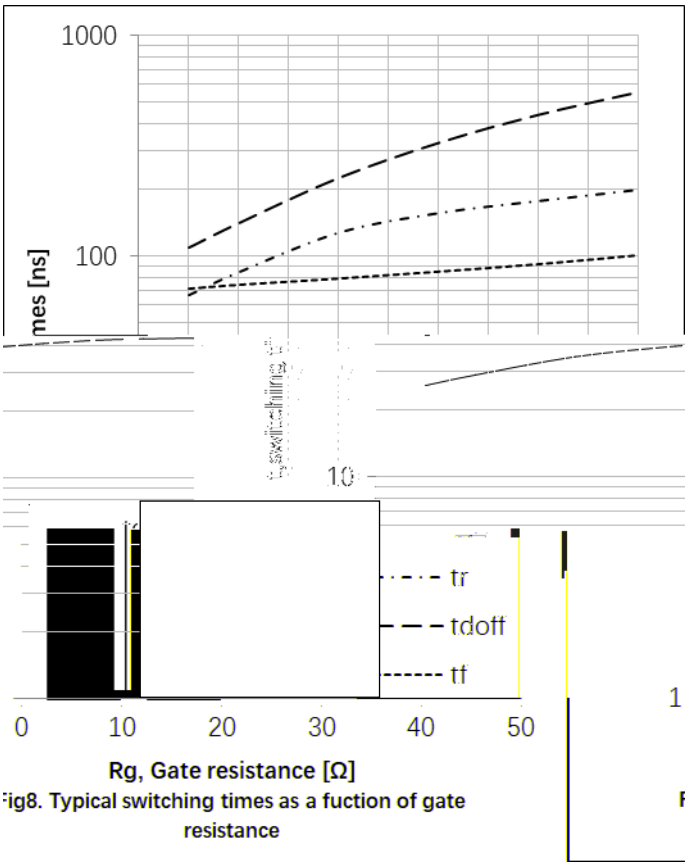
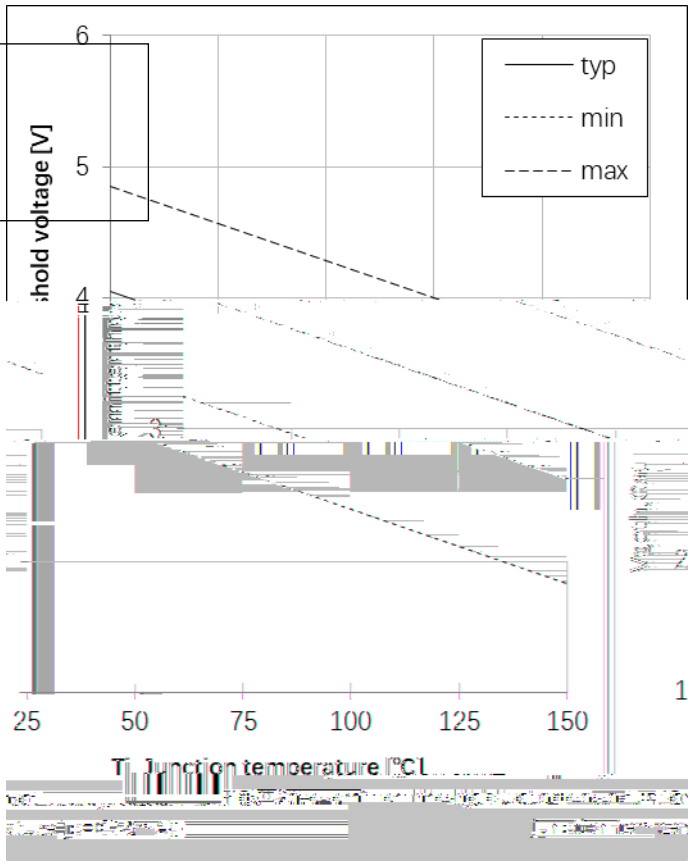
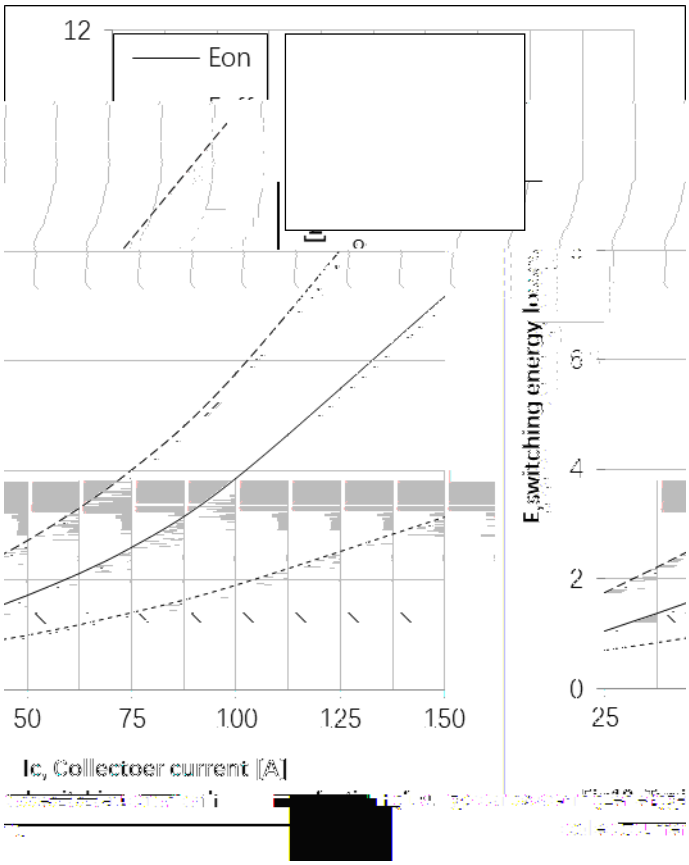
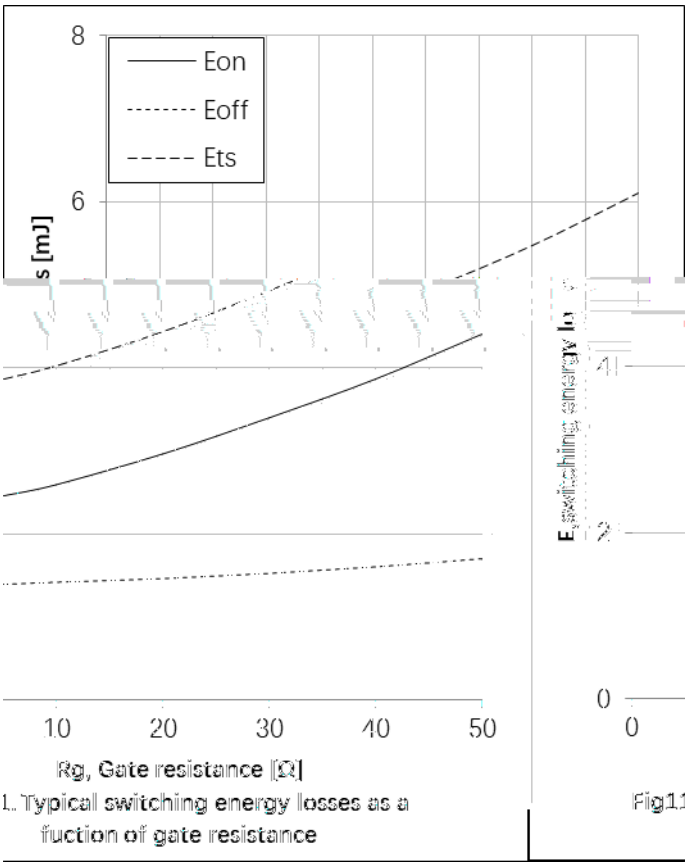


Fig8. Typical switching times as a fuction of gate resistance







1. Typical switching energy losses as a fuction of gate resistance

Fig11

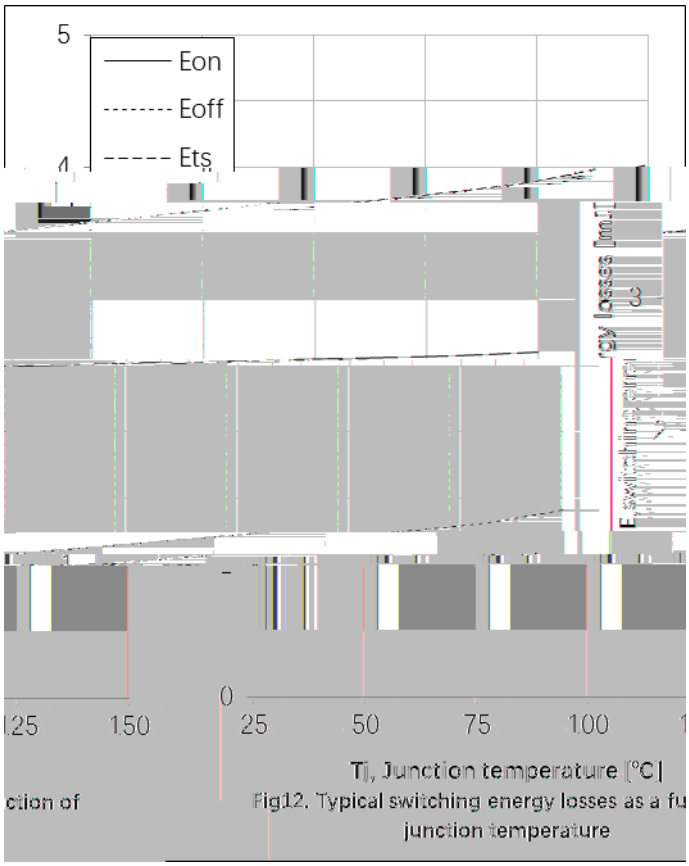
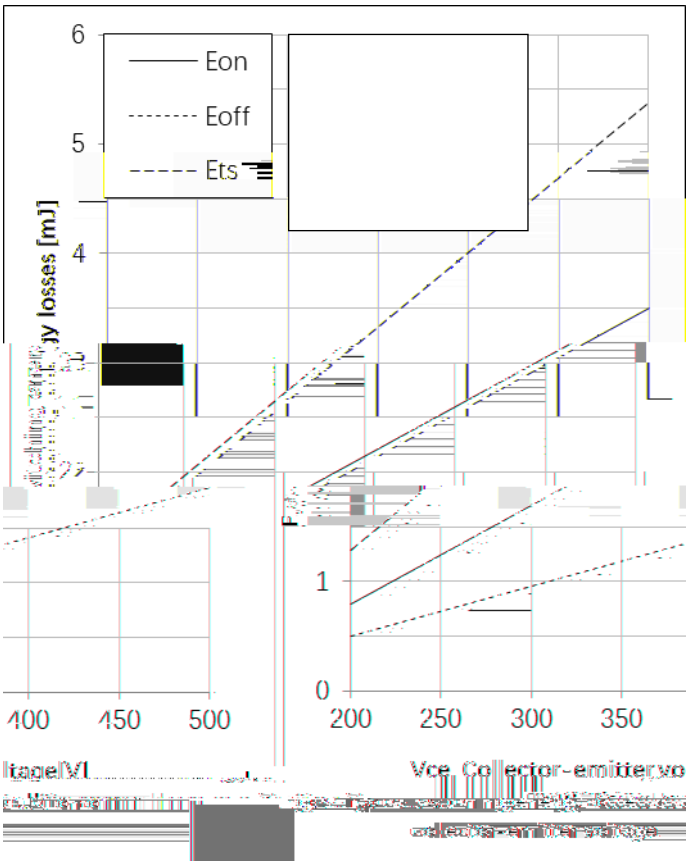
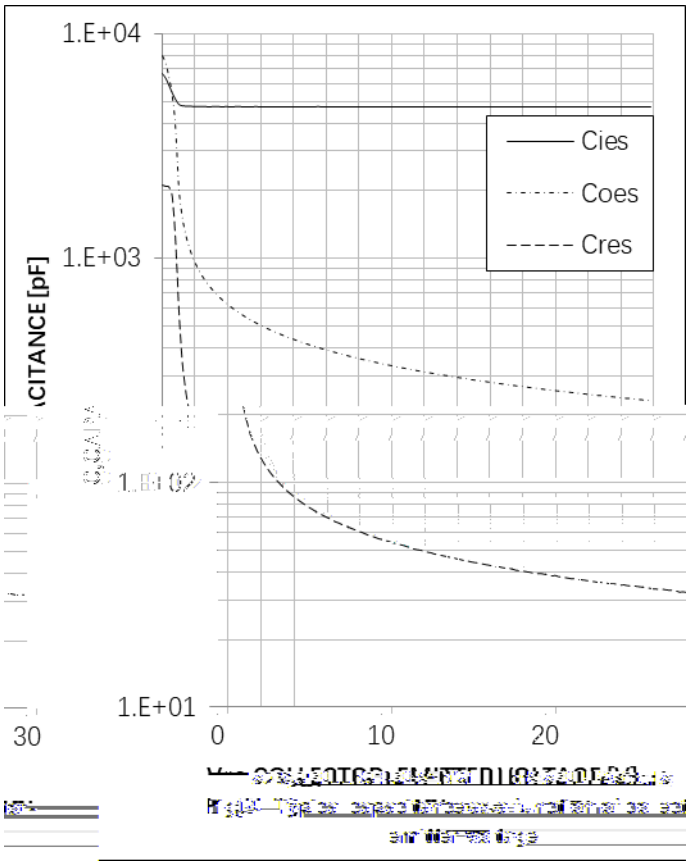


Fig12. Typical switching energy losses as a fu junction temperature





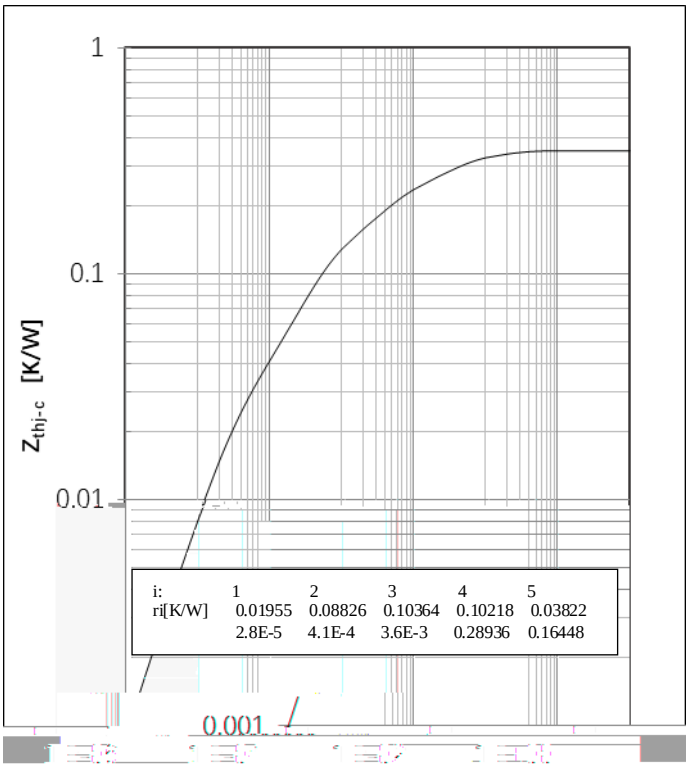
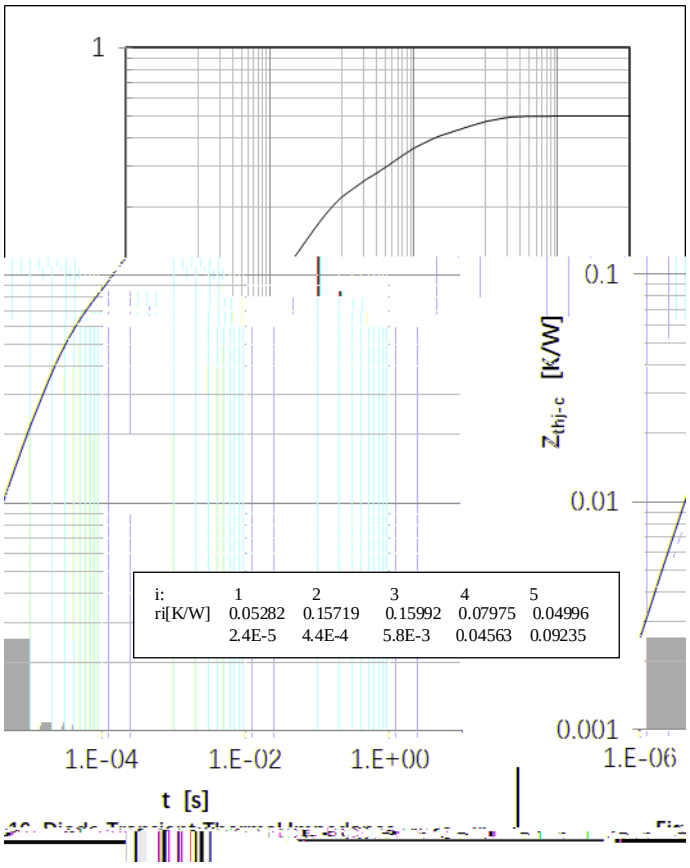


Fig 15. IGBT Transient Thermal Impedance



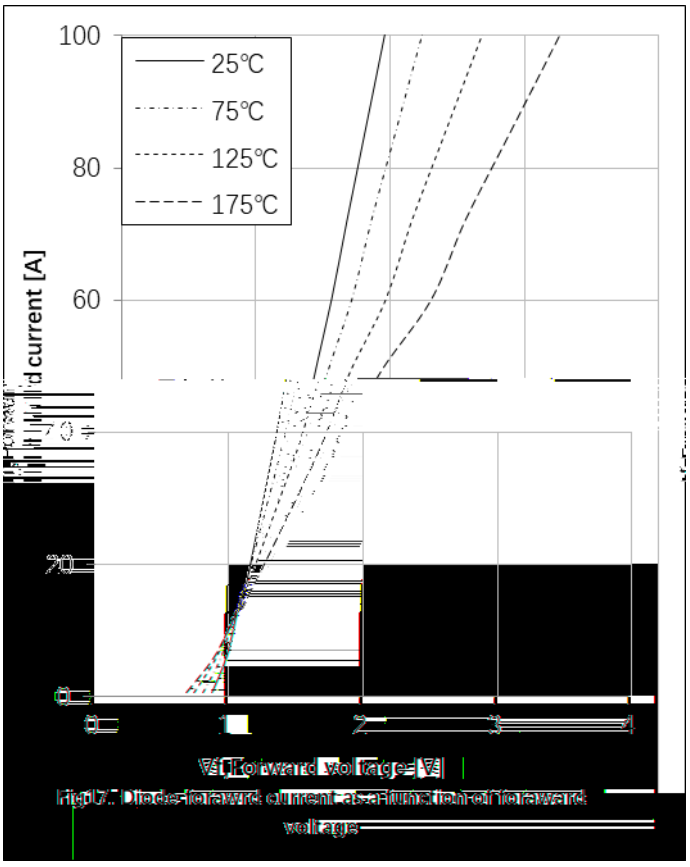


Fig17. Diode forward current vs. forward voltage

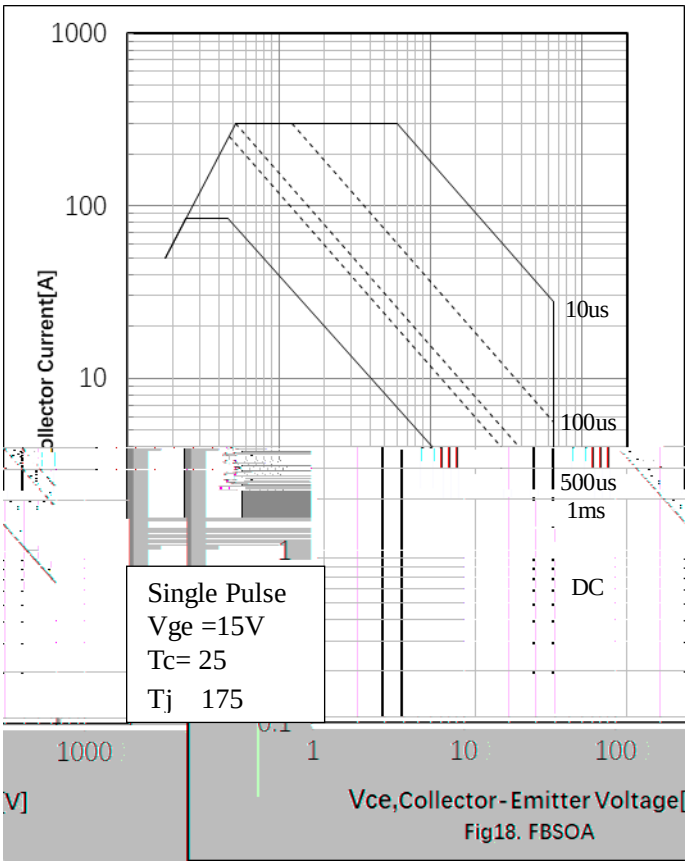


Fig18. FBSOA

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