

## IGBT Discrete

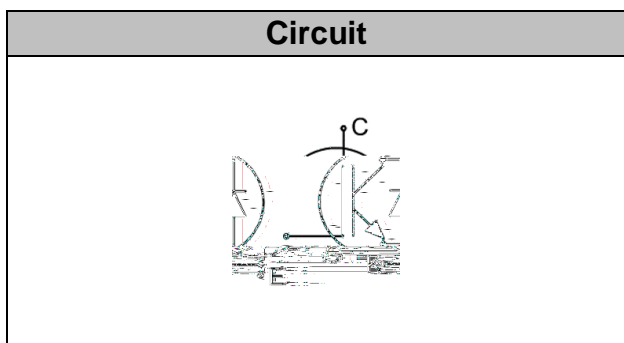
$V_{CE}$	<b>650</b>	<b>V</b>
$I_C$	<b>75</b>	<b>A</b>
$V_{CE(SAT)} I_C=75A$	<b>1.45</b>	<b>V</b>

## 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 $T_{jmax}$ $T_C=25^\circ C$ value limited by bondwire $T_C=100^\circ C$	$I_C$	85 80	A
Diode Forward Current, limited by $T_{jmax}$ $T_C=25^\circ C$ value limited by bondwire $T_C=100^\circ C$	$I_F$	85 80	A
Continuous Gate-Emitter Voltage	$V_{GE}$	$\pm 20$	V
Transient Gate-Emitter Voltage $(t_p=10\mu s, D<0.010)$	$V_{GE}$	$\pm 30$	V
Turn off Safe Operating Area $V_{CE}=650V,$ $T_j$		300	A
Pulsed Collector Current, $V_{GE}=15V,$ $t_p$ limited by $T_{jmax}$	$I_{CM}$	300	A
Diode Pulsed Current, $t_p$ limited by $T_{jmax}$	$I_{Fpuls}$	300	A
Power Dissipation, $T_j=175^\circ C, T_C=25^\circ C$	$P_{tot}$	428	W



**DGZC75N65CTS2A**



## Switching Characteristic, Inductive Load

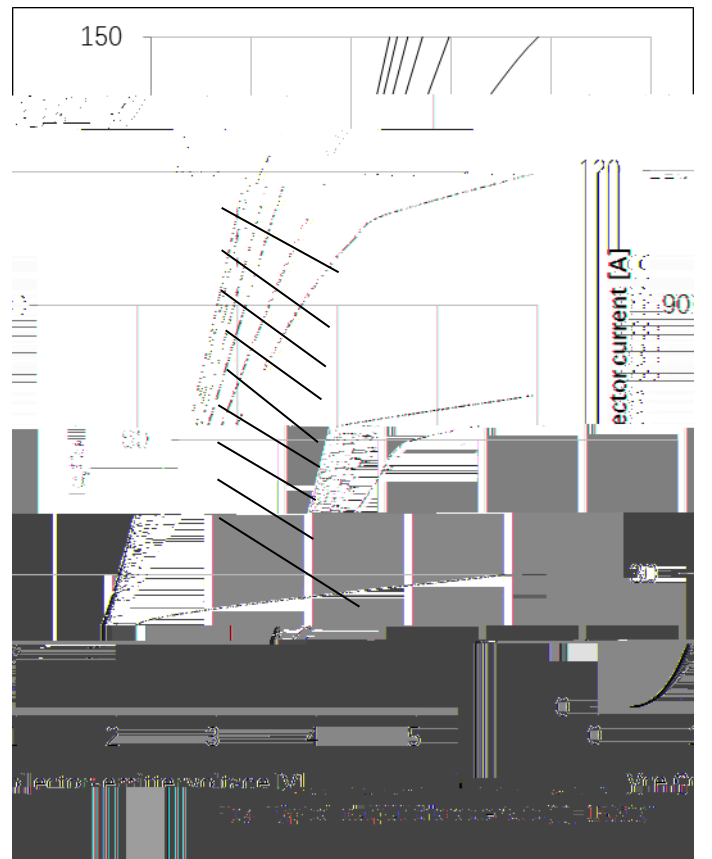
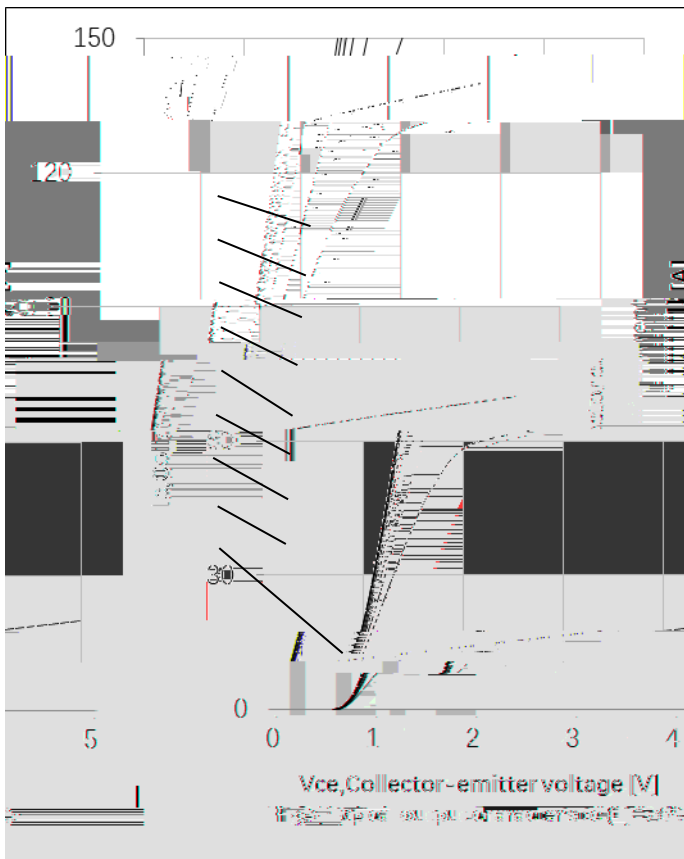
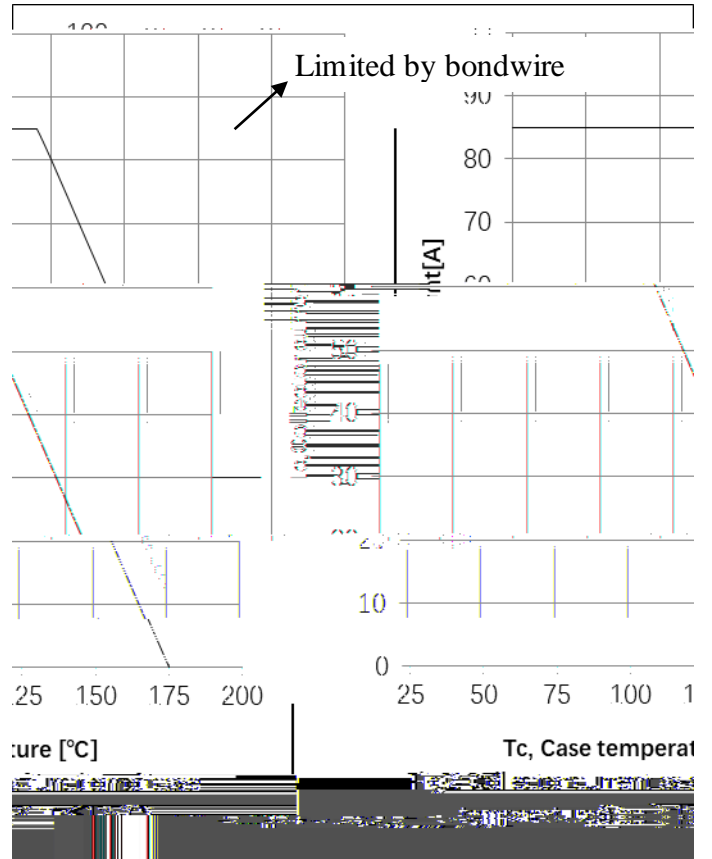
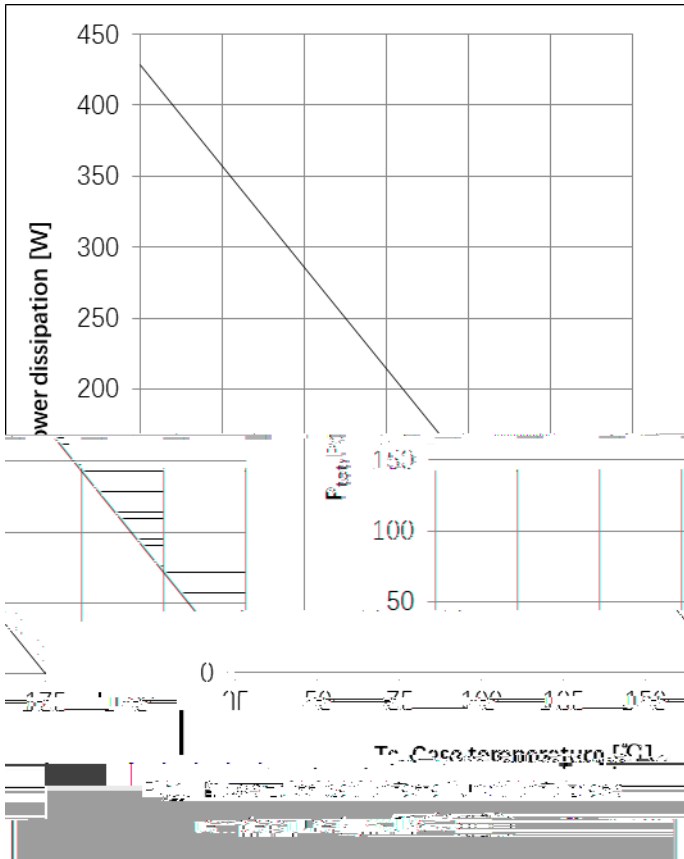
## Electrical Characteristics of the DIODE

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Static</b>						
Diode Forward Voltage	$V_F$	$I_F=75A$ $T_j=25^{\circ}C$ , $T_j=175^{\circ}C$		1.70 2.60	1.90	V
Diode Capacitive Charge	$Q_C$	$V_R=400V$ , $T_j=25^{\circ}C$		135		nC
Diode Capacitance	$C$	$f=1MHz$ $V_R=0V$ , $V_R=200V$ $V_R=400V$		2453 247 243		pF

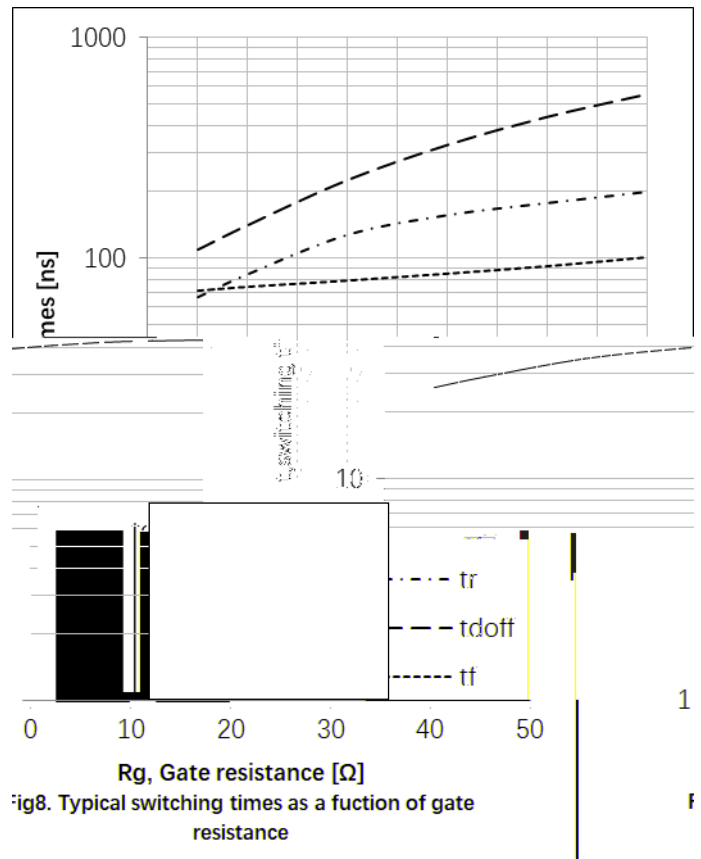
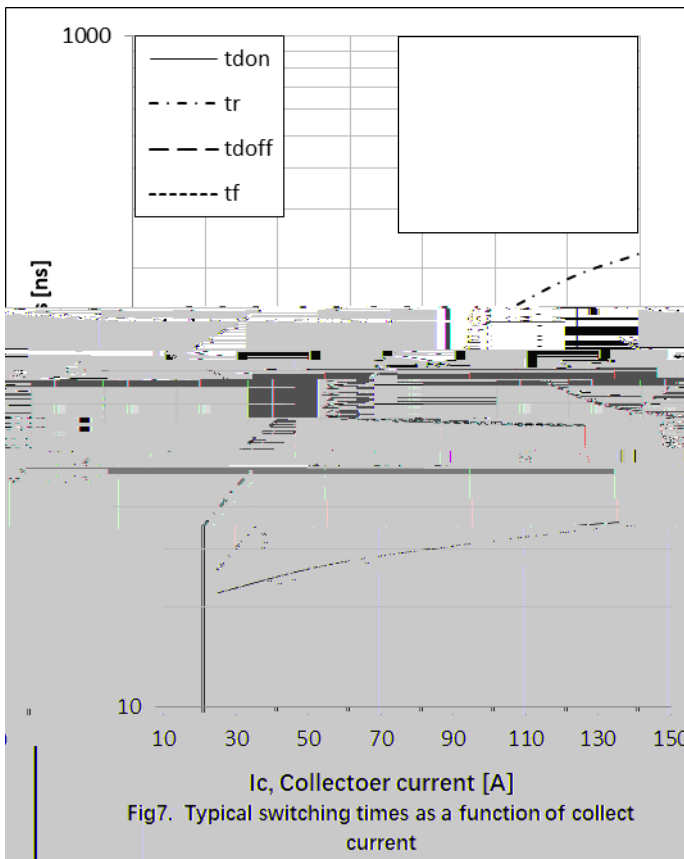
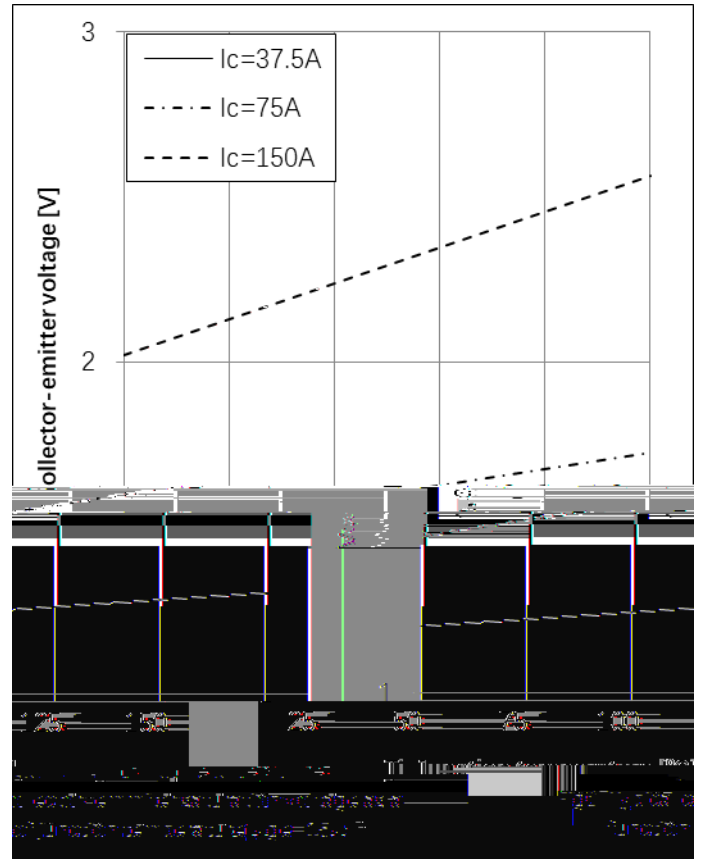
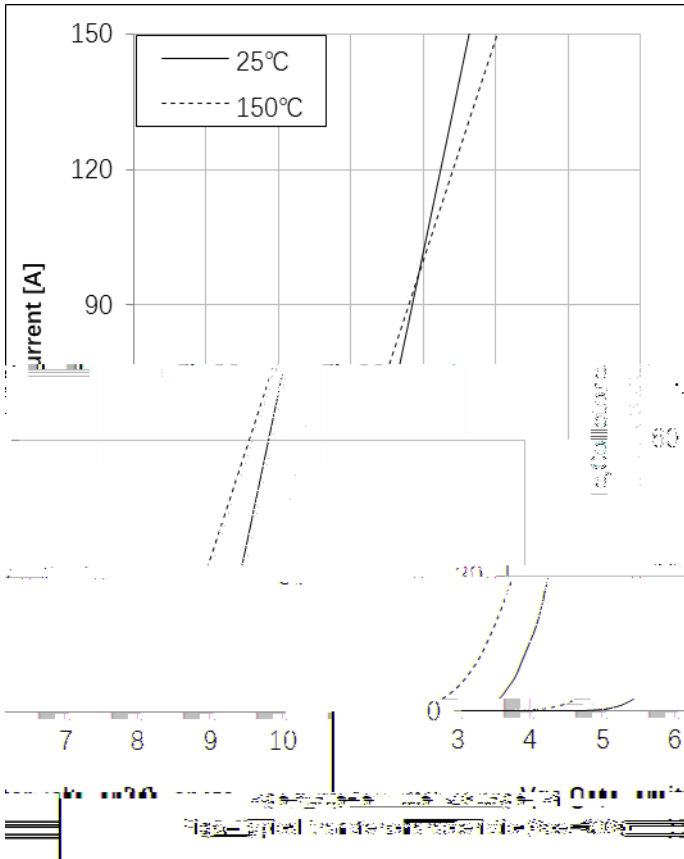
## Thermal Resistance

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

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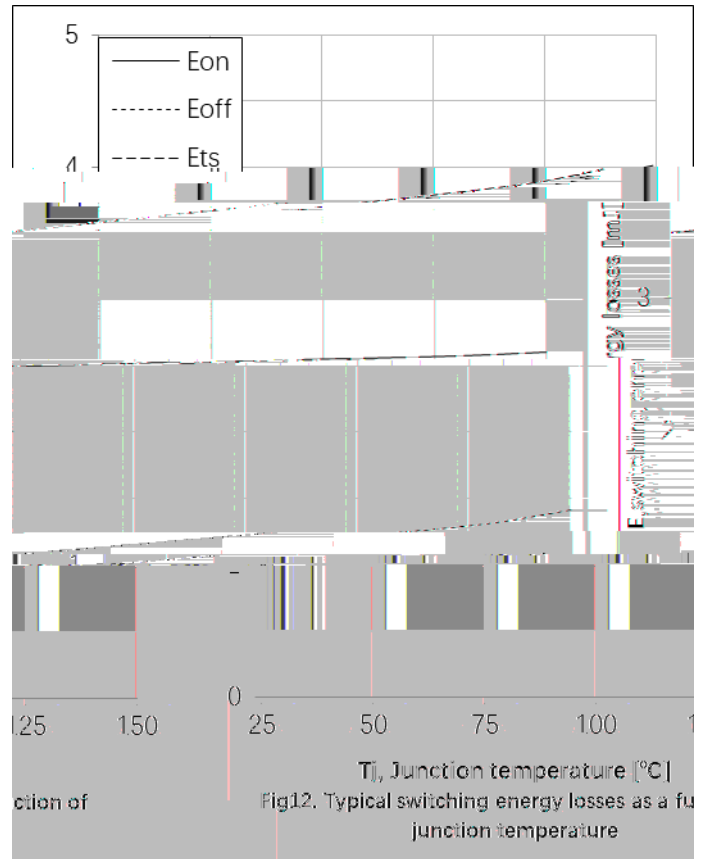
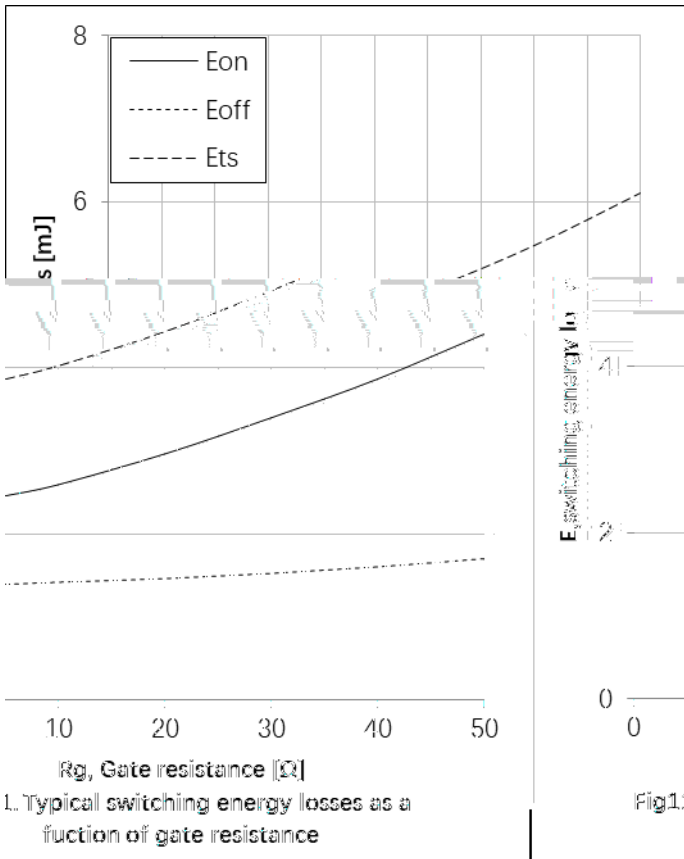
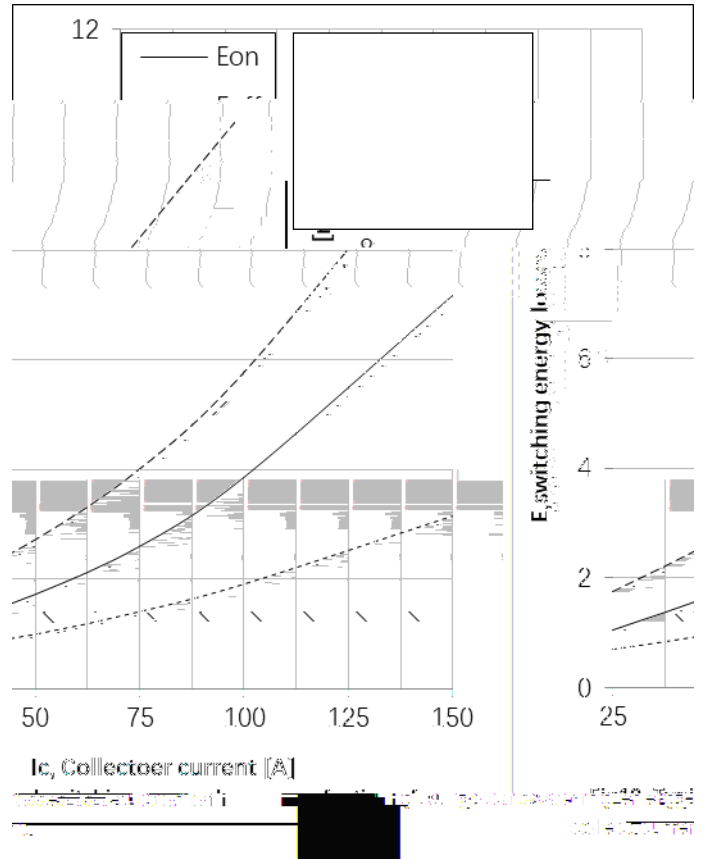
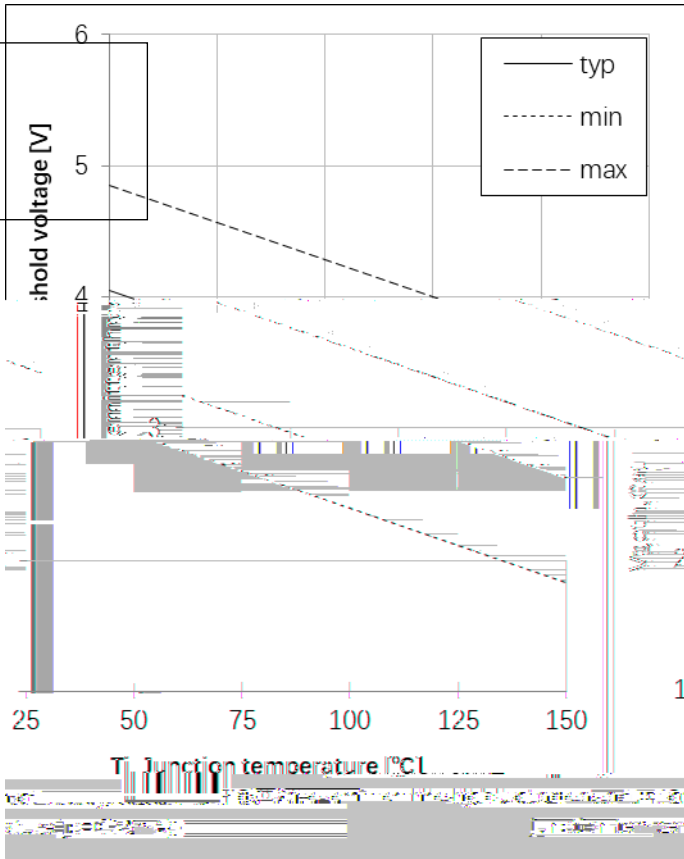


Fig11. Typical switching energy losses as a function of gate resistance

Fig11

Fig12. Typical switching energy losses as a function of junction temperature

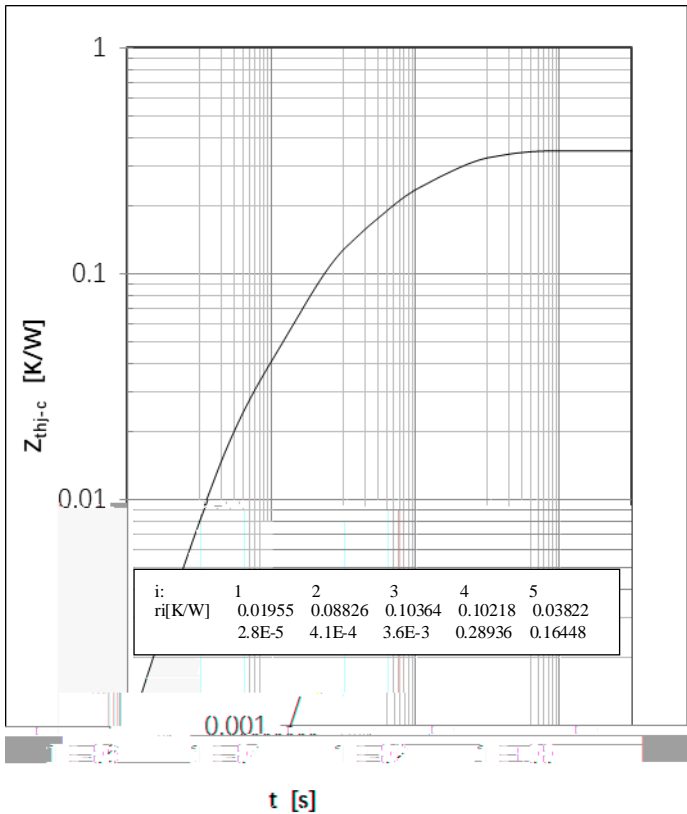
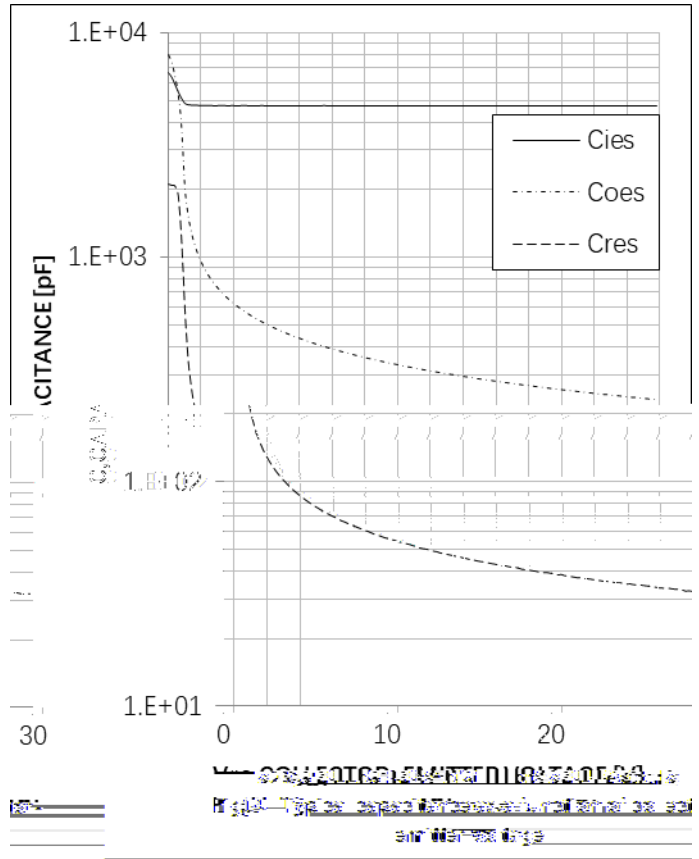
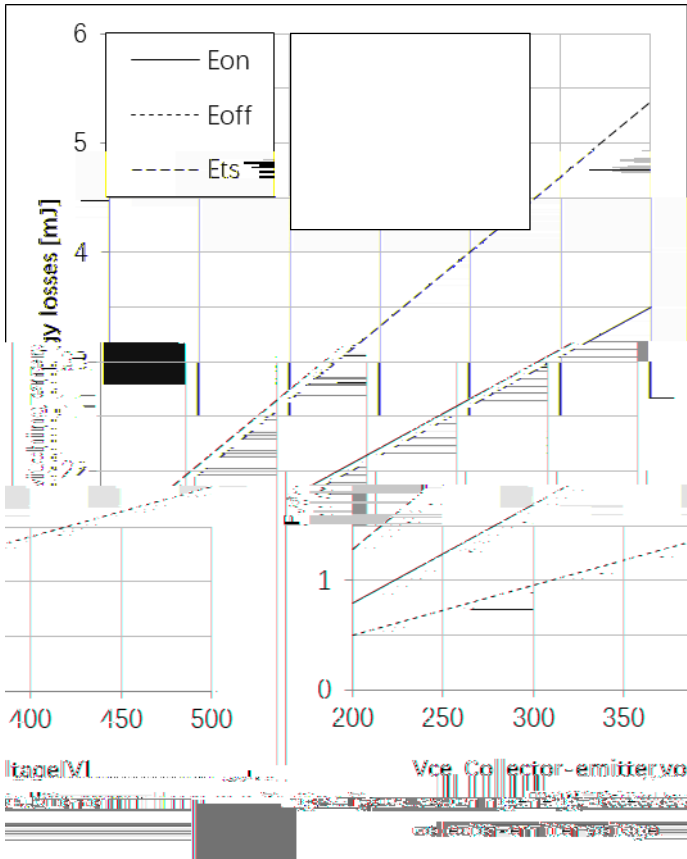


Fig 15. IGBT Transient Thermal Impedance

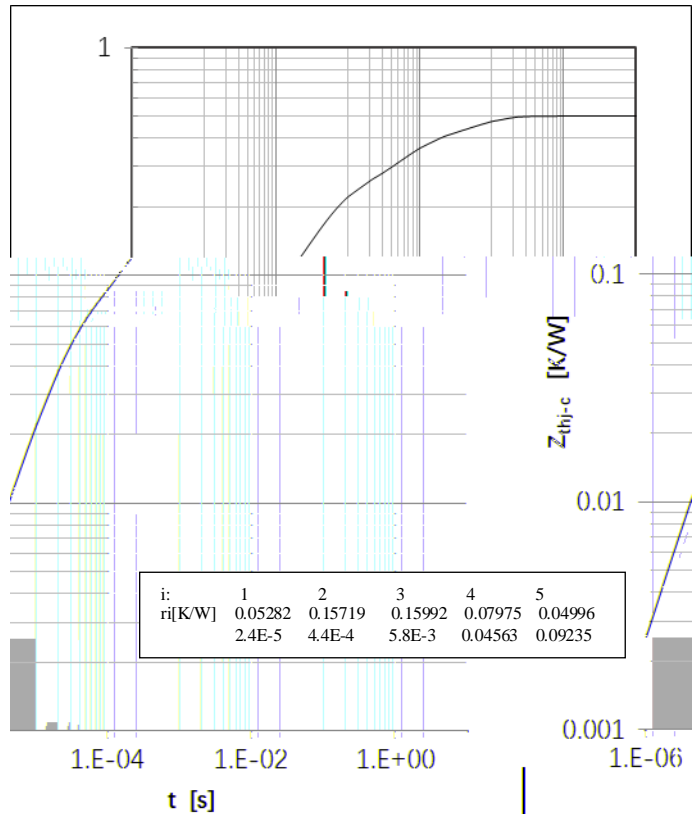
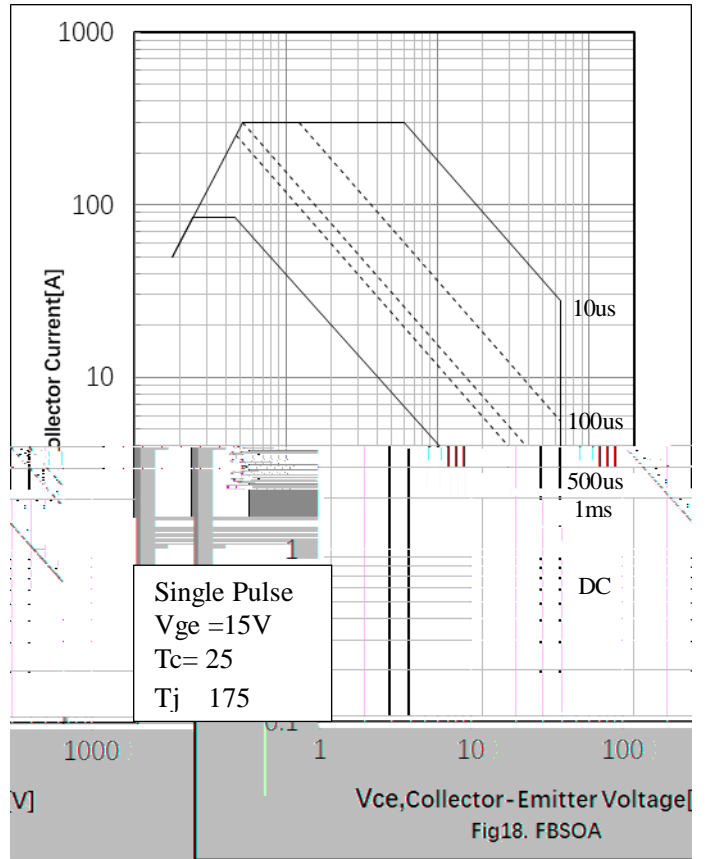
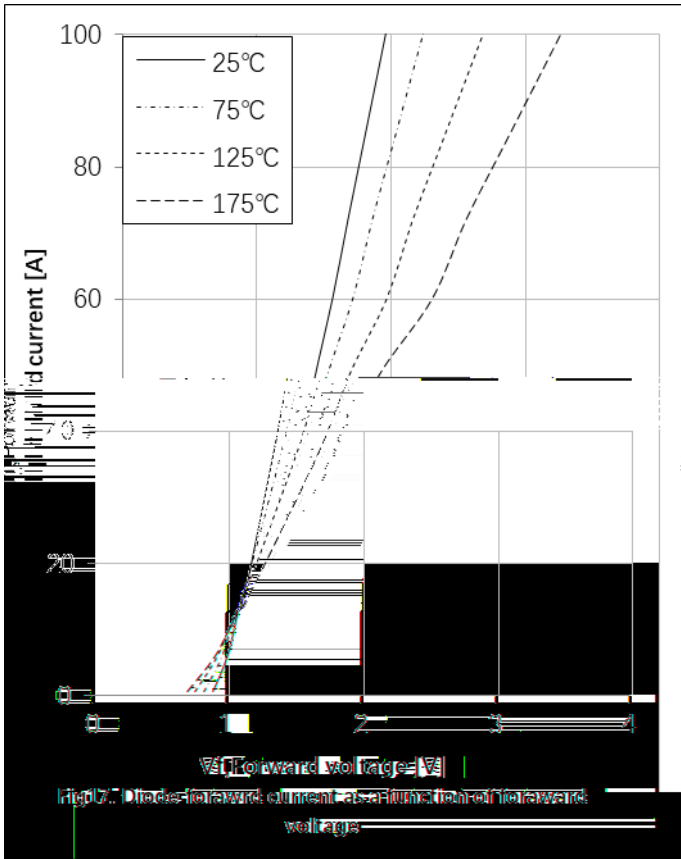


Fig 16. Diode Transient Thermal Impedance

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