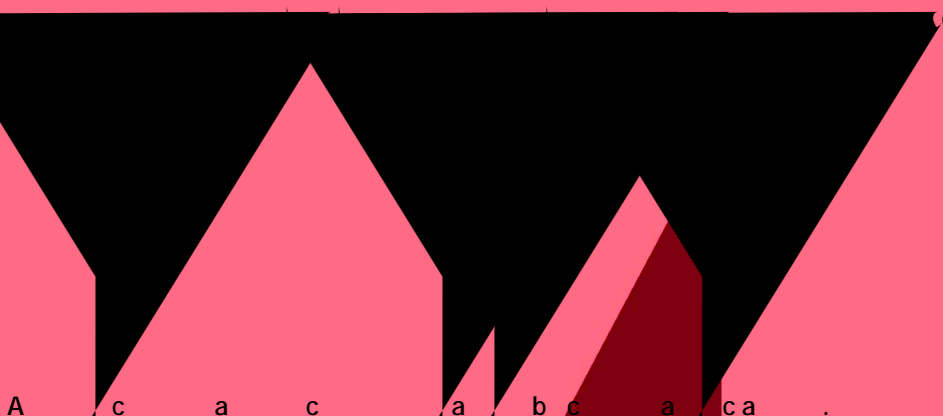




$V_{CES}$	Collector-emitter voltage	1350	V
$V_{GES}$	Gate-emitter voltage	$\pm 20$	V
$I_C$	Continuous collector current ( $T_C=25^\circ$ )	50	A
	Continuous collector current ( $T_C=100^\circ$ )	25	A
$I_{CM}$	Pulsed collector current, $t_p$ limited by $T_{vjmax}$	100	A
$I_F$	Diode continuous forward current ( $T_C=100^\circ$ )	25	A
$I_{FM}$	Diode maximum current, $t_p$ limited by $T_{vjmax}$	100	A
$P_{tot}$	Power dissipation ( $T_C=25^\circ$ )	283	W
	Power dissipation ( $T_C=100^\circ$ )	142	W
$T_{vj}$	Operating junction temperature range	-40 to +175	
$T_{stg}$	Storage temperature range	-55 to +150	

$R_{th(j-c)}$  Thermal resistance, j



( $T_{vj}=25$  unless otherwise specified)

## Static characteristics

$BV_{CES}$	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=1mA$	1480	-	-	V
$I_{CES}$	Collector-emitter leakage current	$V_{CE}=1350V, V_{GE}=0V$	-	-	100	$\mu A$
$I_{GES}$	Gate leakage current, forward	$V_{GE}=20V, V_{CE}=0V$	-	-	100	nA
	Gate leakage current, reverse	$V_{GE}=-20V, V_{CE}=0V$	-	-	-100	nA
$V_{GE(th)}$	Gate-emitter threshold voltage	$V_{GE}=V_{CE}, I_C=1mA$	5.0	5.4	6.0	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$V_{GE}=15V, I_C=25A$	-	1.65	-	V
		$V_{GE}=15V, I_C=25A, T_{vj}=175$	-	2.05	-	V

## Dynamic characteristics

$C_{ies}$	Input capacitance	$V_{CE}=30V$ $V_{GE}=0V$ $f=1MHz$	-	4530	-	pF
$C_{oes}$	Output capacitance		-	47	-	pF
$C_{res}$	Reverse transfer capacitance		-	20	-	pF
$Q_g$	Total gate charge	$V_{CC}=1080V$ $V_{GE}=15V$ $I_C=25A$	-	147	-	nC



## Switching characteristics

$t_{d(on)}$	Turn-on delay time	$V_{CC}=600V$ $V_{GE}=0/15V$ $I_C=25A$ $R_G=10$ Inductive load	-	37	-	ns
$t_r$	Rise time		-	29	-	ns
$t_{d(off)}$	Turn-off delay time		-	192	-	ns
$t_f$	Fall time		-	183	-	ns
$E_{on}$	Turn-on energy		-	1.2	-	mJ
$E_{off}$	Turn-off energy		-	1.1	-	mJ
$E_{ts}$	Total switching energy		-	2.3	-	mJ
$t_{d(on)}$	Turn-on delay time	$V_{CC}=600V$ $V_{GE}=0/15V$ $I_C=25A$ $R_G=10$ , $T_{vj}=175$ Inductive load	-	34	-	ns
$t_r$	Rise time		-	28	-	ns
$t_{d(off)}$	Turn-off delay time		-	203	-	ns
$t_f$	Fall time		-	231	-	ns
$E_{on}$	Turn-on energy		-	1.3	-	mJ
$E_{off}$	Turn-off energy		-	1.6	-	mJ
$E_{ts}$	Total switching energy		-	2.9	-	mJ

( $T_{vj}=25$  unless otherwise specified)

	Forward voltage		-	1.75	-	V
		5	-	1.70	-	V

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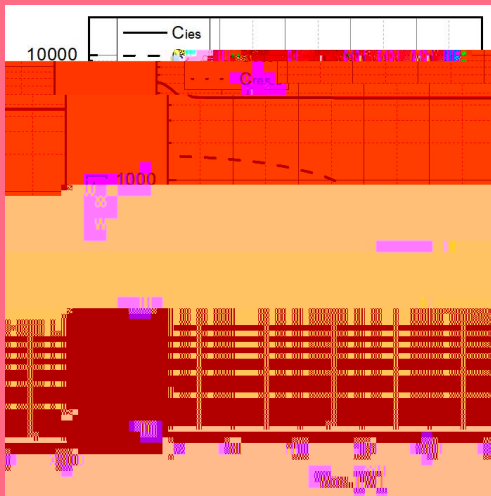


Fig 13. Typical capacitance as a function of  $V_{CE}$   
( $f=1\text{MHz}$ ,  $V_{GE}=0\text{V}$ )

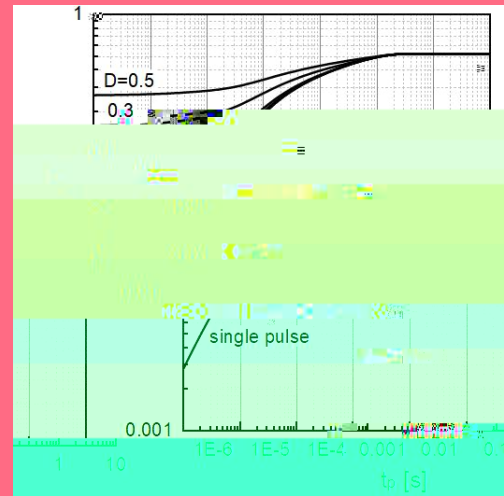


Fig 14. Transient thermal impedance of IGBT

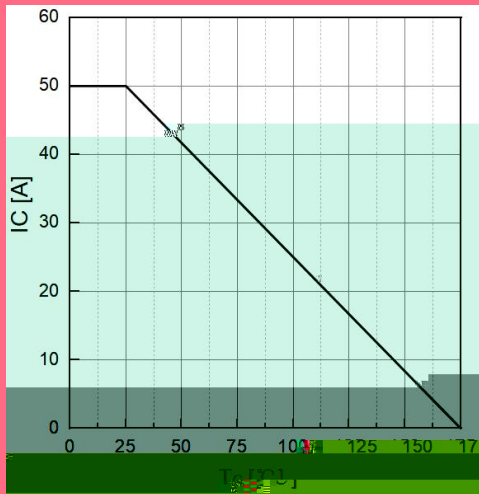


Fig 15. Continuous collector current as a function of  $T_{vj}$  175

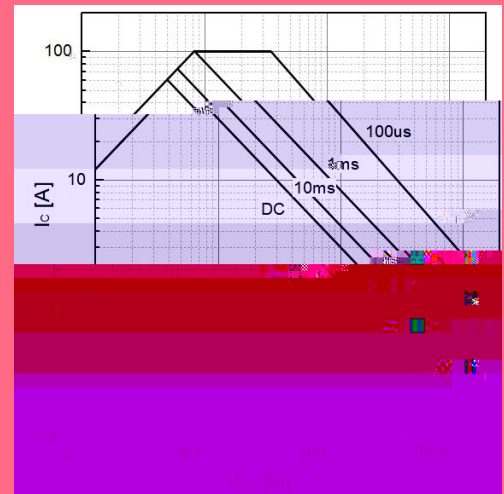


Fig.16 Forward bias safe operating area

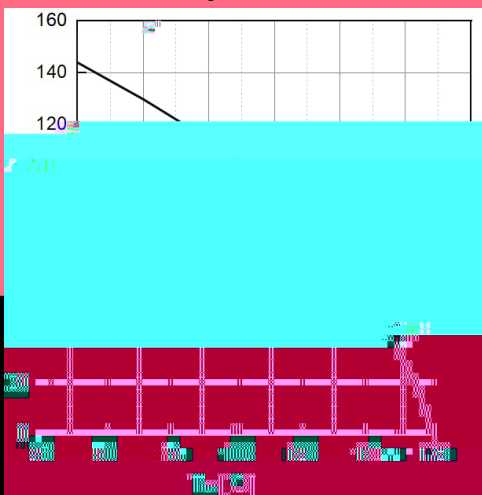


Fig 17. Pulsed collector current as a function of  $T_{vj}$   
( $T_{vj} < 175$ ,  $D=1$ ,  $t_p=100\mu\text{s}$ )



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A c a c a b c a ca .