Key performance:

- $_{CE}$ =1200V
- $_{C}$=75A@ $_{C}$=100

Symbol	Parameter	Value

Electrical characteristics of IGBT (vj=25 unless otherwise specified)

Static characteristics

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
CES	Collector-emitter breakdown voltage	GE=0V, IC=250μA	1200	-	-	V
CES	Collector-emitter leakage current	CE=1200V, GE=0V	-	-	100	μA
GES	Gate leakage current, forward	GE=20V, CE=0V	-	-	100	nA
	Gate leakage current, reverse	GE=-20V, CE=0V	-	-	-100	nA
GE(th)	Gate-emitter threshold voltage	GE= CE, C=1mA	5.0	5.5	6.0	V
CE(sat)	Collector-emitter saturation voltage	GE=15 V, C=75A	-	1.7	-	V
		GE=15V, C=75A, vj=175	-	2.2	-	V

Dynamic characteristics

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
ies	Input capacitance	CE=30V GE=0V =1MHz	-	6800	-	pF
oes	Output capacitance		-	350	-	pF
res	Reverse transfer capacitance		-	60	-	pF
g	Total gate charge	CC=960V =15V =75A	-	420	-	nC

Switching characteristics

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
d(on)	Turn-on delay time	$_{CC}$=600V $_{GE}$=0/15V $_{C}$=75A $_{G}$=10 Inductive load	-	86	-	ns
r	Rise time		-	186	-	ns
d(off)	Turn-off delay time		-	520	-	ns
f	Fall time		-	84	-	ns
on	Turn-on energy		-	11.9	-	mJ
off	Turn-off energy		-	4.7	-	mJ
ts	Total switching energy		-	16.6	-	mJ
d(on)	Turn-on delay time	$_{CC}$=600V $_{GE}$=0/15V $_{C}$=75A $_{G}$=10 Inductive load $_{vj}$=175	-	84	-	ns
r	Rise time		-	194	-	ns
d(off)	Turn-off delay time		-	580	-	ns
f	Fall time		-	63	-	ns
on	Turn-on energy		-	17.5	-	mJ
off	Turn-off energy		-	6.8	-	mJ
ts	Total switching energy		-	24.3	-	mJ

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
$_F$	Diode forward voltage	$_F$=75A	-	1.8	-	V
		$_F$=75A $_{vj}$=175	-	o8	-	V

A d c f a c ed a d bec e a d c a e .

Typical performance characteristics

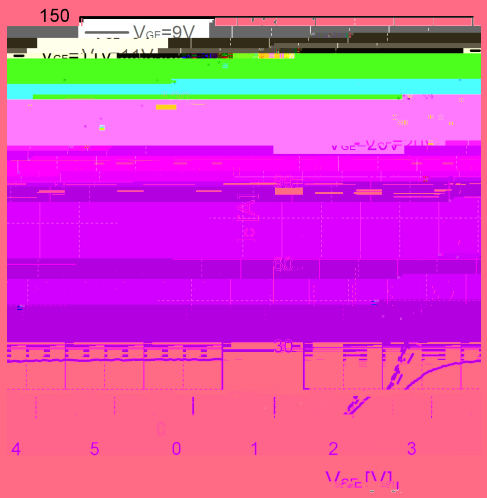


Fig 1. Typical output characteristic (vj=25)

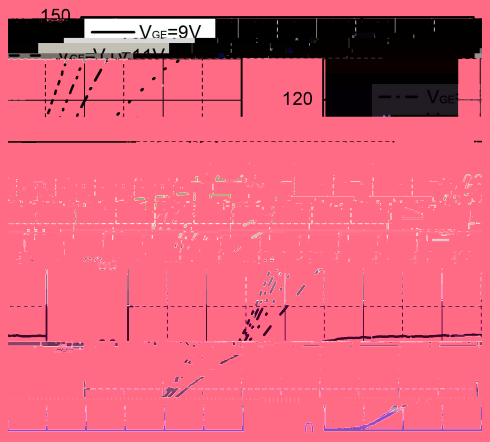


Fig 2. Typical output characteristic(vj=175)

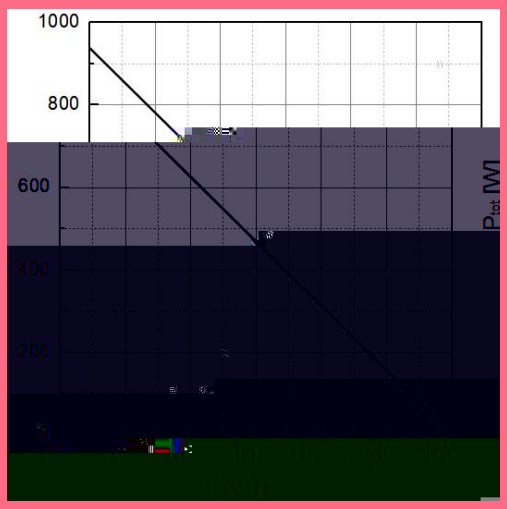


Fig 3. Power dissipation as a function of

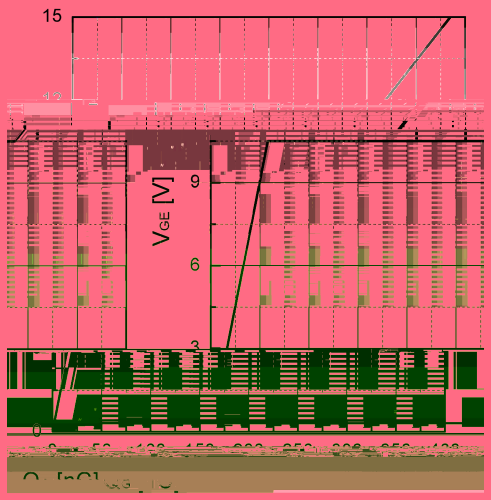


Fig 4. Typical Gate charge

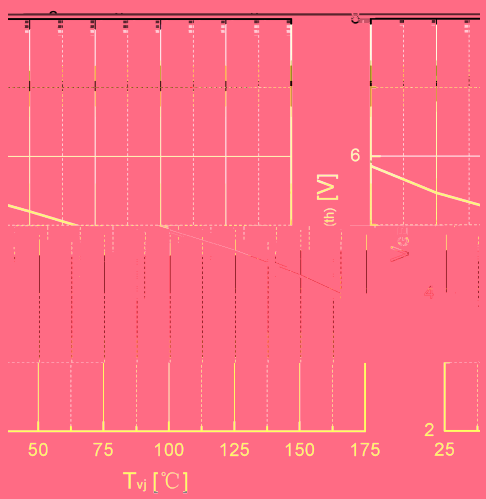


Fig 5. Typical GE(th) as a function of vj (C=1mA)

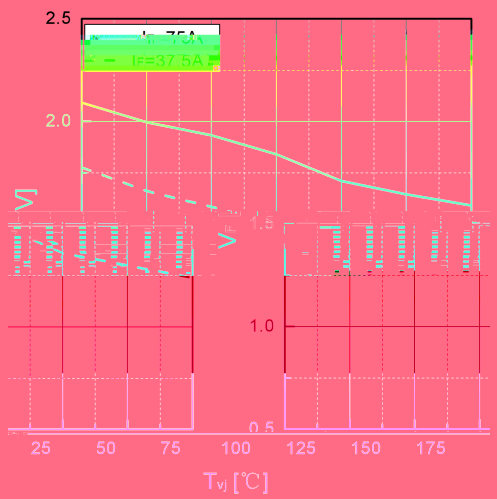


Fig 6. Typical F as a function of vj

Typical performance characteristics

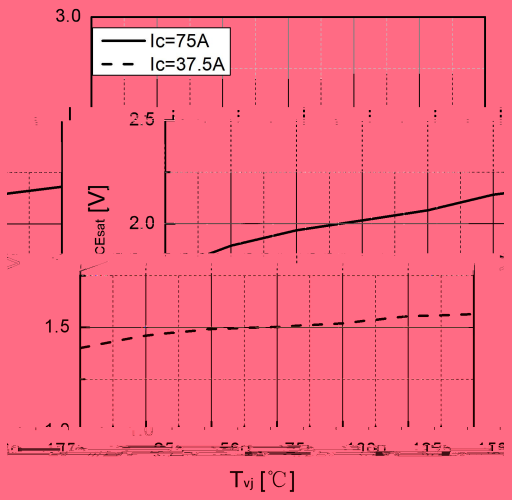


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

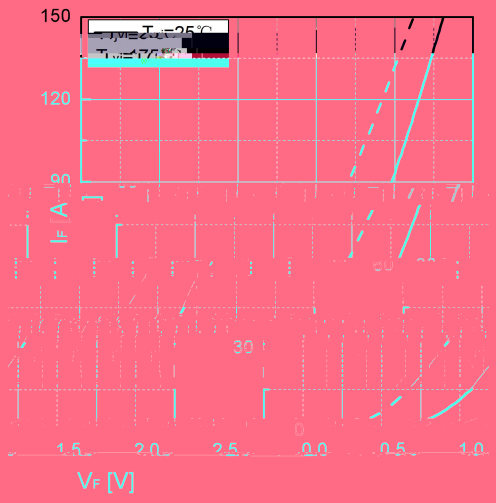


Fig 8. Typical $_{F}$ as a function of $_{F}$

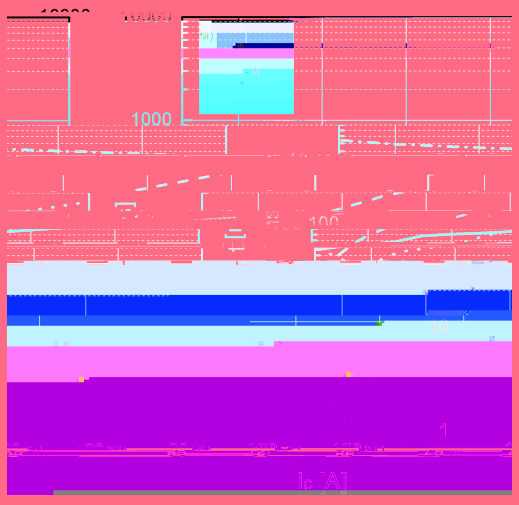


Fig 9. Typical switching time as a function of $_{C}$

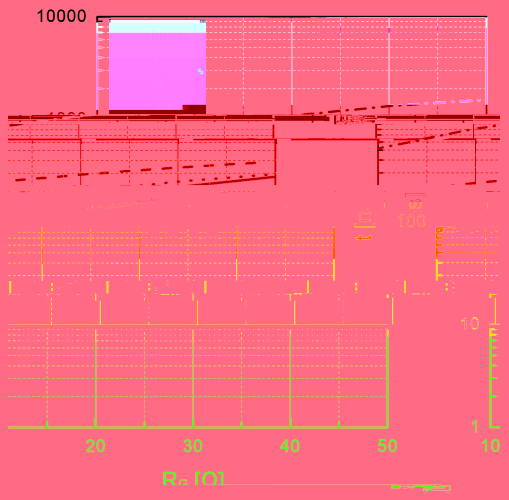


Fig 10. Typical switching times as a function of $_{G}$

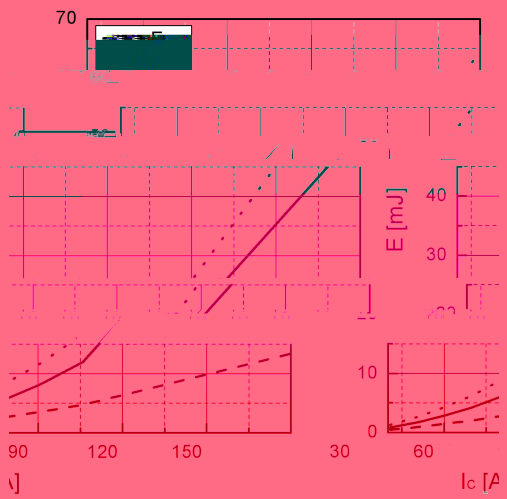


Fig 11. Typical switching energy losses as a function of $_{C}$

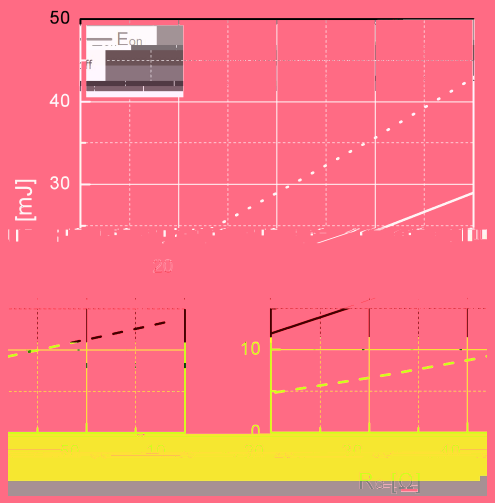


Fig 12. Typical switching energy losses as a function of $_{G}$

A d c f a c ed a d bec e a d ca e .

Typical performance characteristics

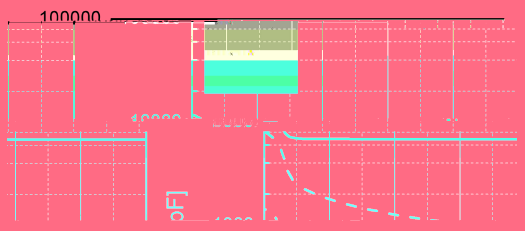


Fig 13. Typical capacitance as a function of $_{CE}$ (f=1Mhz, $_{GE}$=0V)

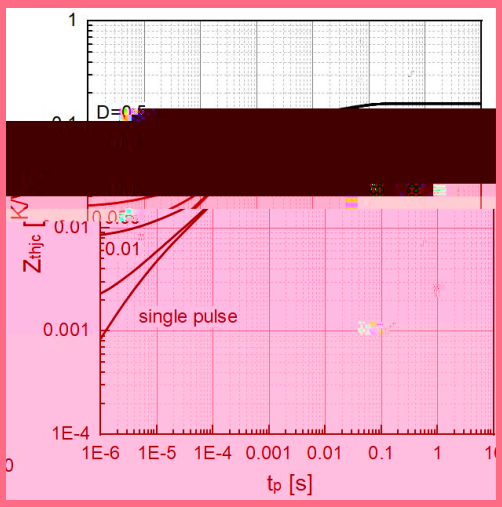


Fig 18. Transient thermal impedance of IGBT



A d c f a c edad bec e a d ca e .



A d c f a c ed