



Symbol	Parameter	Values	Unit
CES	Collector-emitter voltage	650	V
GES	Gate-emitter voltage	± 20	V
C	Continuous collector current ($T_c=25^\circ\text{C}$)	12	A
	Continuous collector current ($T_c=100^\circ\text{C}$)	6	A
CM	Pulsed collector current, I_p limited by v_{jmax}	24	A
F	Diode continuous forward current ($T_c=100^\circ\text{C}$)	6	A
FM	Diode maximum current, I_p limited by v_{jmax}	24	A
sc	Short circuit withstand time	8	μs
tot	Power dissipation ($T_c=25^\circ\text{C}$)	88	W
	Power dissipation ($T_c=100^\circ\text{C}$)	44	W
vj	Operating junction temperature range	-40 to +175	
stg	Storage temperature range	-55 to +150	



Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
V_{CES}	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=250\mu A$	650	-	-	V
I_{CES}	Collector-emitter leakage current	$V_{CE}=650V, V_{GE}=0V$	-	-	10	μ

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Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
d(on)	Turn-on delay time		-	9	-	ns
r	Rise time		-	18	-	ns
d(off)	Turn-off delay time	CC=400V GE=0/15V	-	24	-	ns
f	Fall time	c=6A G=10	-	91	-	ns
on	Turn-on energy	Inductive load	-	0.18	-	mJ
off	Turn-off energy		-	0.09	-	mJ
ts	Total switching energy		-	0.27		

Turn-on

delay

d(on)

turn

**Electrical characteristics of Diode** ($v_j=25$ unless otherwise specified)

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
F	Diode forward voltage	$F=6A$	-	1.4	-	V
		$F=6A, v_j=175$	-	1.2	-	V
t_r	Diode reverse recovery time	$R=400V$ $F=6A$ $d F/d = -500A/\mu s$	-	55	-	ns
I_{rrm}	Diode peak reverse recovery current		-	10	-	A
Q_{rr}	Diode reverse recovery charge		-	306	-	nC
t_r	Diode reverse recovery time	$R=400V$ $F=6A$ $d F/d = -500A/\mu s$ $v_j=175$	-	98	-	ns
I_{rrm}	Diode peak reverse recovery current		-	12	-	A
Q_{rr}	Diode reverse recovery charge		-	529	-	nC

Typical performance characteristics

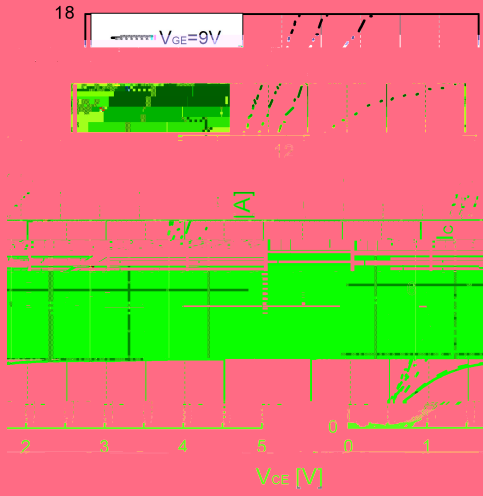


Fig 1. Typical output characteristic ($v_j=25$)

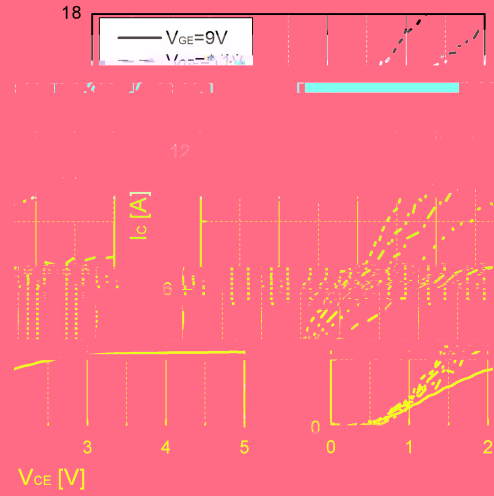


Fig 2. Typical output characteristic($v_j=175$)

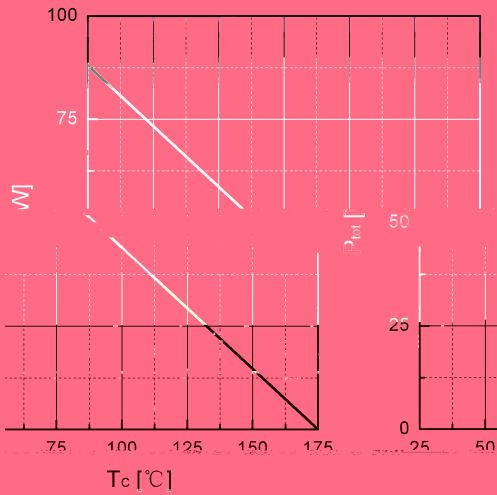


Fig 3. Power dissipation as a function of

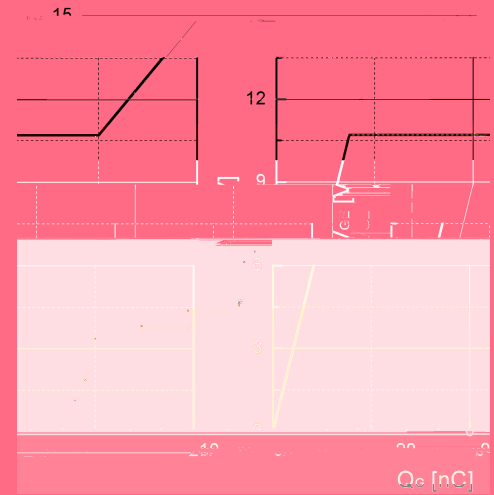


Fig 4. Typical Gate charge

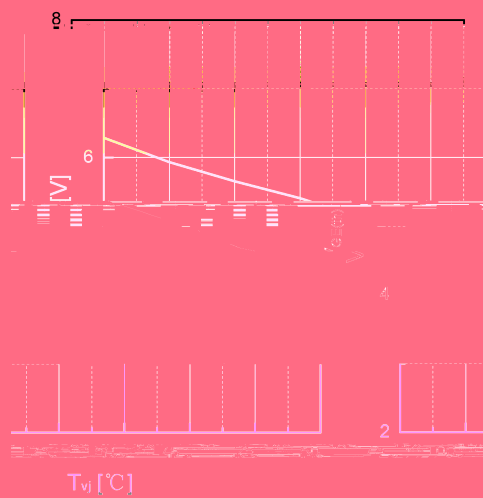


Fig 5. Typical $V_{GE(th)}$ as a function of v_j
($I_C=1mA$)

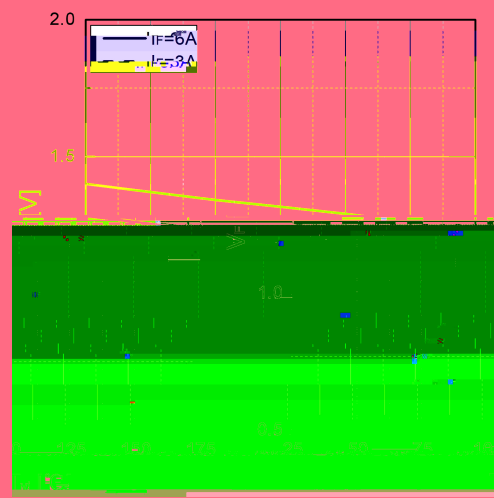


Fig 6. Typical F as a function of v_j



Typical performance characteristics

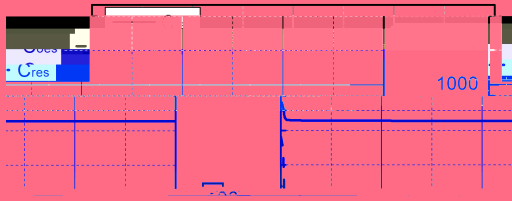
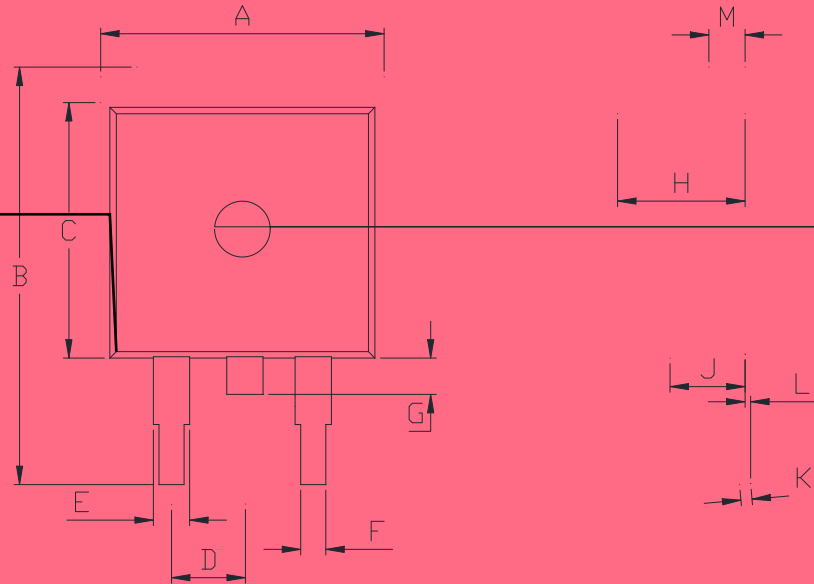


Fig 13. Typical capacitance as a function of C_E
($f=1\text{Mhz}$,

Package dimension

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Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90	-	10.20	0. 0	-	0.402
B	14.70	-	15.80	0.5	-	0. 2
C	9.4	-	9.6	0.	-	0. 8
D	-	2.54	-	-	0.100	-
E	1.20	-	1.40	0.047	-	0.055
F	0.75	-	0.85	0.029	-	0.033
G	-	-	1.75	-	-	0.069
H	4.40	-	4.70	0.1	-	0.185
J	2.	-	2.70	0.091	-	0.106
K	0.	-	0.55	0.015	-	0.022
L	M	M10	M25	M	M004	M010
M	1.25	-	1.	0.049	-	0.053



Date	Revision	Changes
2025-03-19	1.0	Release of the datasheet

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