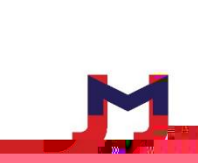
p

- $_{CE}$=650V
- $_{C}$=15A@ $_{C}$=100
- $_{CE(sat)}$=1.6 V

- High ruggedness perfa rmanpp GJ
- 6µs short circuit capability.
- Positive $_{CE\ (sat)}$ te mpers GJ

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

Static characteristics

$_{CES}$	Collector-emitter breakdown voltage	$_{GE}$=0V, $_{C}$=250μA	650	-	-	V
$_{CES}$	Collector-emitter leakage current	$_{CE}$=650V, $_{GE}$=0V	-	-	20	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	5.1	5.6	6.1	V
$_{CE(sat)}$	Collector-emitter saturation voltage	$_{GE}$=15V, $_{C}$=15A	-	1.6	-	V
		$_{GE}$=15V, $_{C}$=15A, $_{vj}$=175	-	2.1	-	V

Dynamic characteristics

$_{ies}$	Input capacitance	$_{CE}$=30V $_{GE}$=0V =1MHz	-	955	-	pF
$_{oes}$	Output capacitance		-	51	-	pF
$_{res}$	Reverse transfer capacitance		-	6	-	pF
$_{g}$	Total gate charge	$_{CC}$=520V $_{GE}$=15V $_{C}$=15A	-	32	-	nC

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$t_{d(on)}$	Turn-on delay time		-	16	-	ns
t_r	Rise time		-	21	-	ns
$t_{d(off)}$	Turn-off delay time	V_{CC}=400V V_{GE}=0/15V	-	67	-	ns
t_f	Fall time	I_C=15A R_G=10	-	86	-	ns
E_{on}	Turn-on energy	Inductive load	-	0.45	-	mJ
E_{off}	Turn-off energy		-	0.32	-	mJ
E_{ts}	Total switching energy		-	0.77	-	mJ
$t_{d(on)}$	Turn-on delay time		-	16	-	ns
t_r	Rise time		-	21	-	ns
$t_{d(off)}$	Turn-off delay time	V_{CC}=400V V_{GE}=0/15V	-	83	-	ns
t_f	Fall time	I_C=15A R_G=10	-	144	-	ns
E_{on}	Turn-on energy	Inductive load T_{vj}=175	-	0.48	-	mJ
E_{off}	Turn-off energy		-	0.46	-	mJ
E_{ts}	Total switching energy		-	0.9m"		

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

$_{F}$	Diode forward voltage	$_{F}$=15A	-	1.4	-	V
		$_{F}$=15A, $_{vj}$=175	-	1.1	-	V
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=15A d $_{F}$/d =-600A/μs	-	160	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	7.5	-	A
$_{rr}$	Diode reverse recovery charge		-	500	-	nC
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=15A d $_{F}$/d =-600A/μs $_{vj}$=175	-	250	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	12.5	-	A
$_{rr}$	Diode reverse recovery charge		-	1340	-	nC

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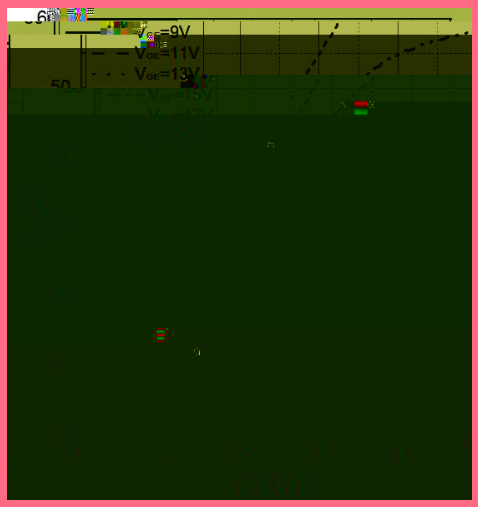


Fig 1. Typical output characteristic ($_{vj}$=25)

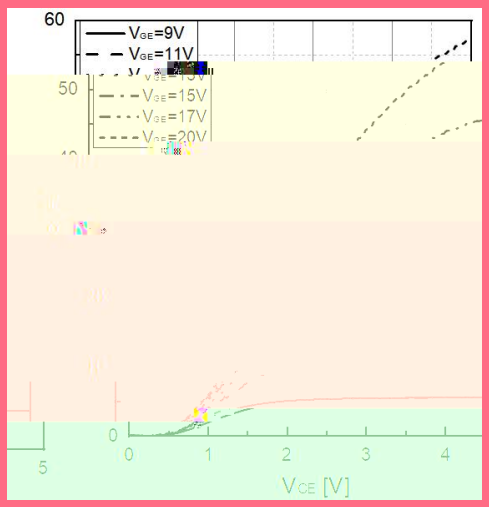


Fig 2. Typical output characteristic($_{vj}$=175)

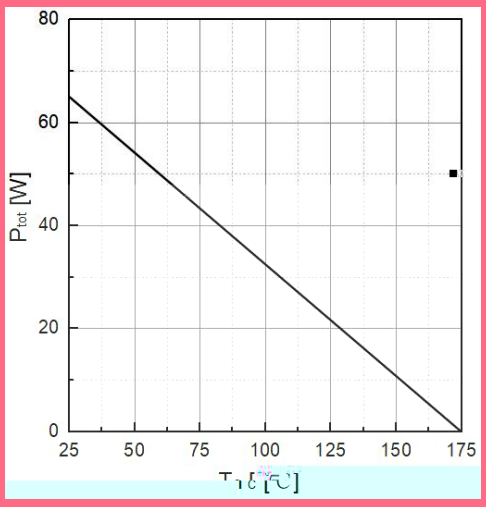


Fig 3. Power dissipation as a function of

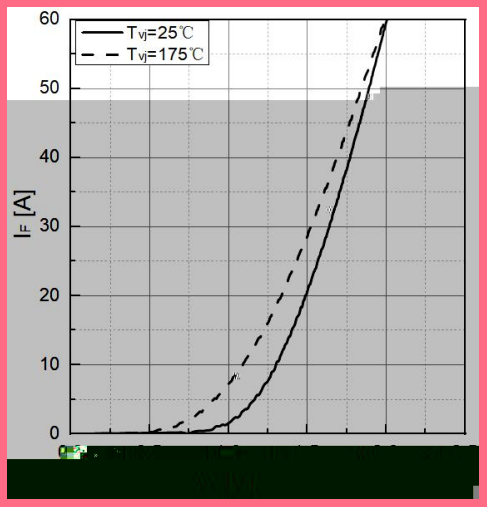


Fig 4. Typical $_{F}$ as a function of $_{F}$

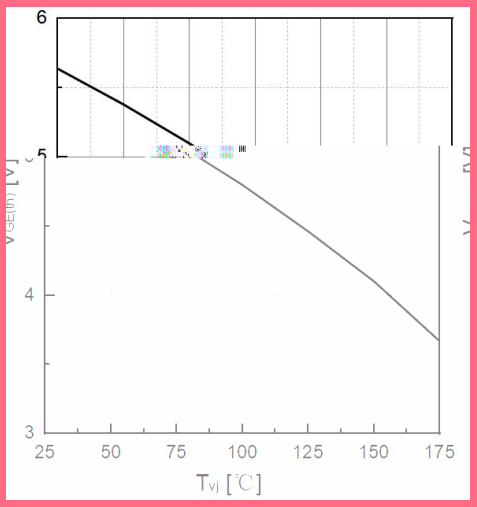


Fig 5. Typical $_{GE(th)}$ as a function of $_{vj}$ ($_{C}$=1mA)

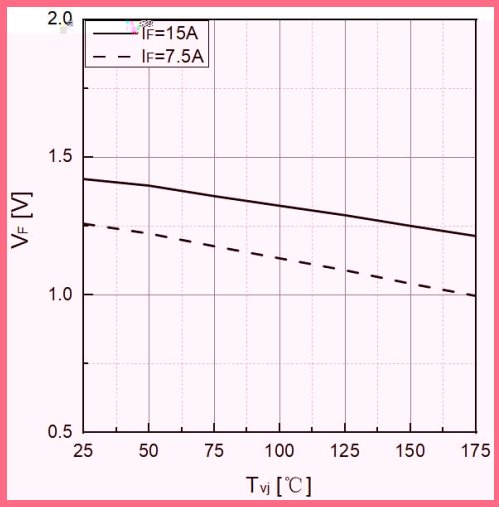


Fig 6. Typical $_{F}$ as function of $_{vj}$

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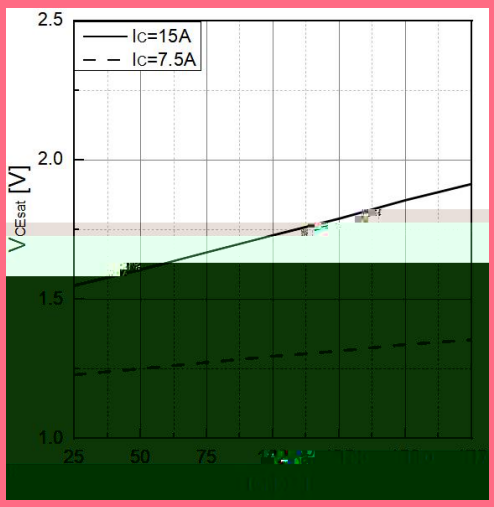


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

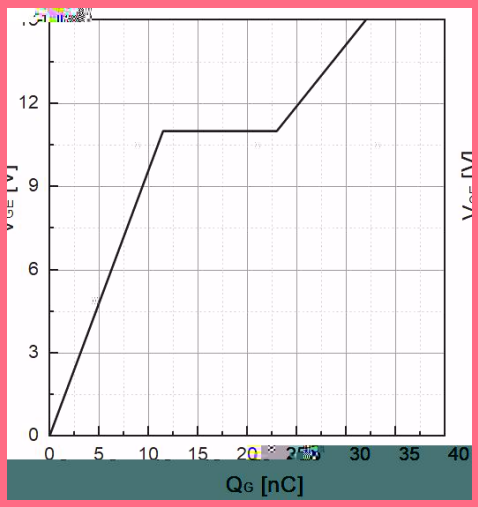


Fig 8. Typical Gate charge

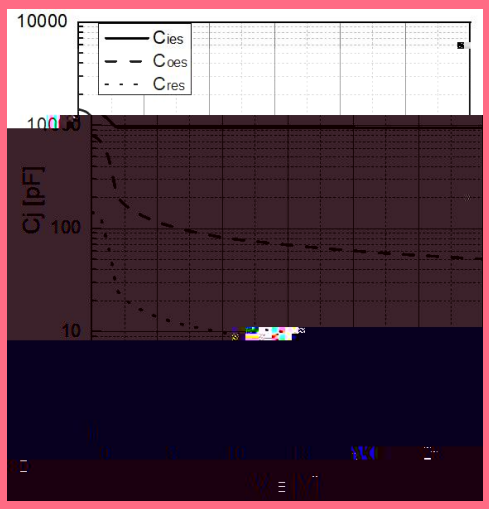


Fig 9. Typical capacitance as a function of $_{CE}$ (=1Mhz, $_{GE}$=0V)

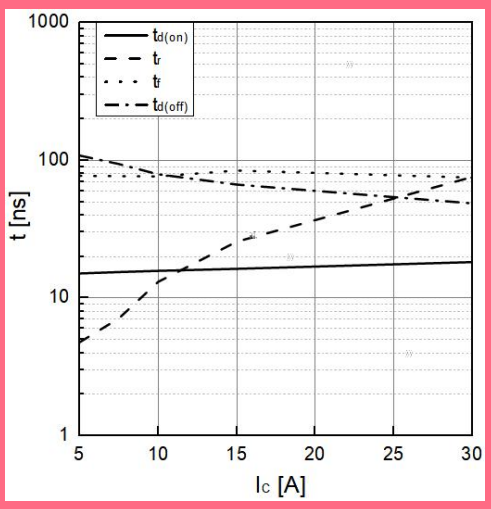


Fig 10. Typical switching times as a function of $_{C}$

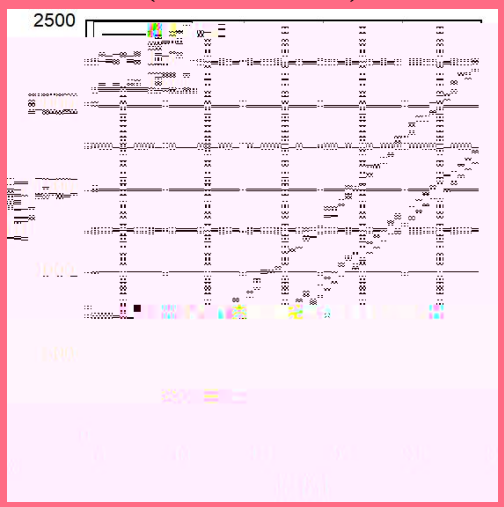


Fig 11. Typical switching energy losses as a function of $_{C}$

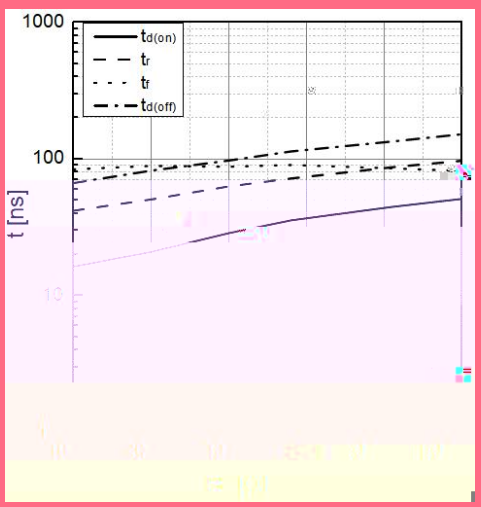


Fig 12. Typical switching times as a function of $_{G}$

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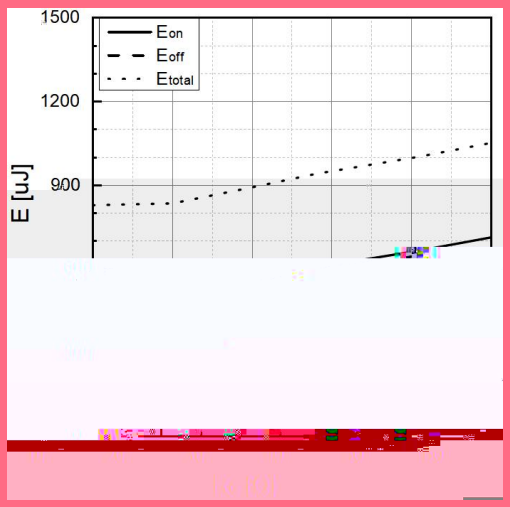


Fig 13. Typical switching energy losses as a function of $_G$

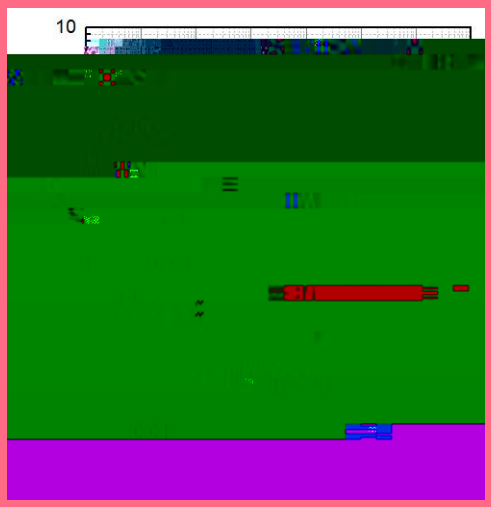
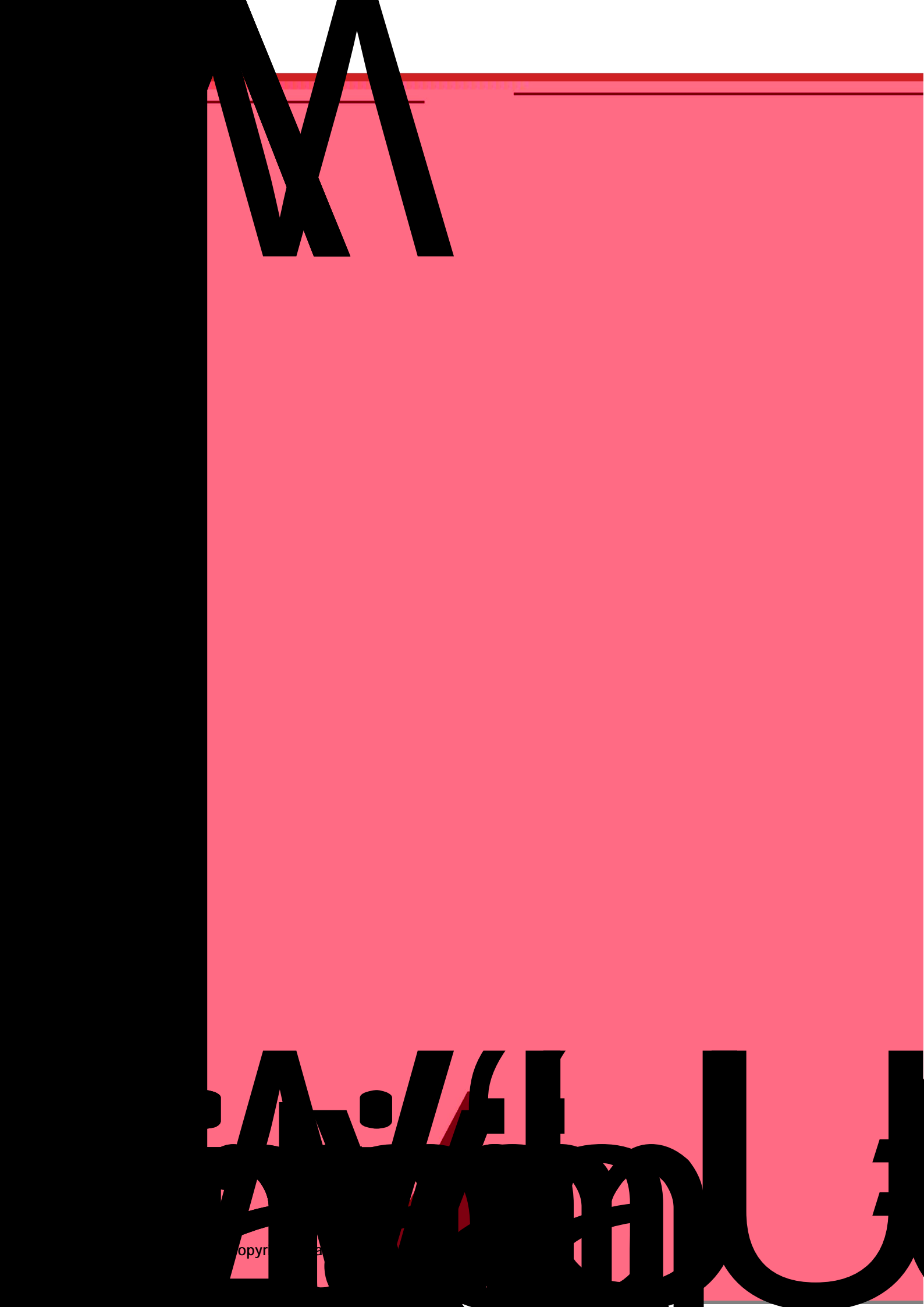


Fig 14. Transient thermal impedance, IGBT

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