JJMICROELECTRONICS

650V 15A Trench and Field Stop IGBT

JJT15N65SY

V_{CES}	Collector-emitter voltage	650	V
I_C			



($_{vj}$=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	-	-	50	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	-	1055	-	pF
$_{oes}$	Output capacitance		-	57	-	pF
$_{res}$	Reverse transfer capacitance		-	15	-	pF
$_{g}$	Total gate charge	$_{CC}$=520V $_{GE}$=15V $_{C}$=15A	-	55	-	nC

($_{vj}$=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	-	55	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	9.5	-	A
$_{rr}$	Diode reverse recovery charge		-	220	-	nC
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=15A d $_{F}$/d =-600A/μs $_{vj}$=175	-	77	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	15	-	A
$_{rr}$	Diode reverse recovery charge		-	481	-	nC

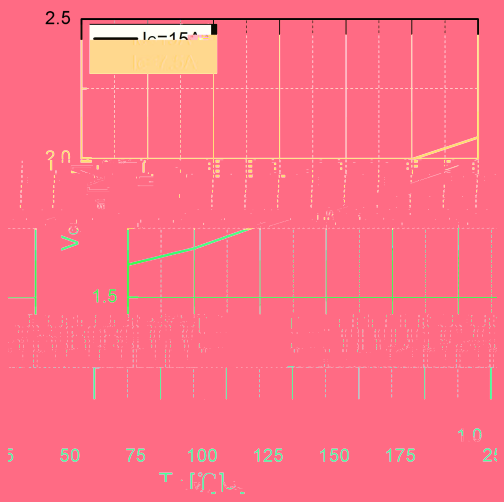


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

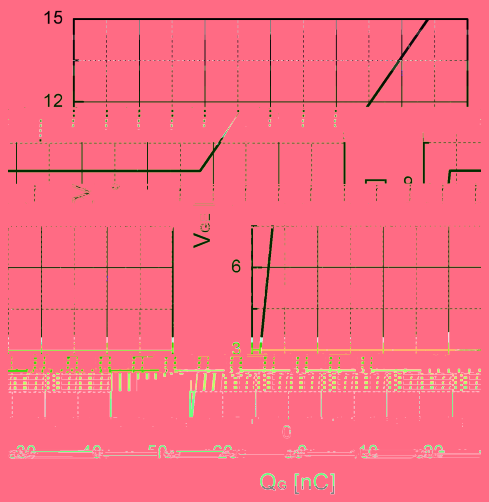


Fig 8. Typical Gate charge

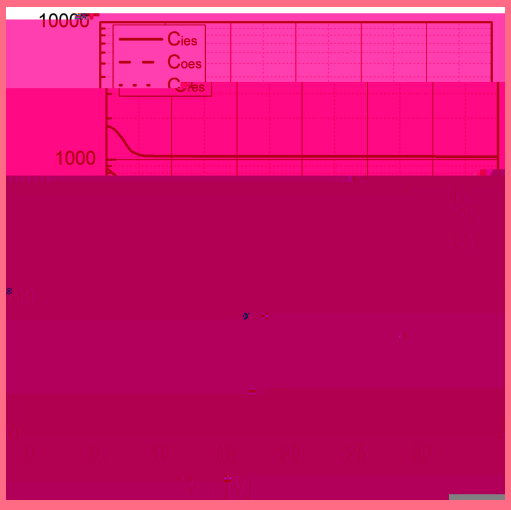


Fig 9. Typical capacitance as a function of $_{CE}$ (=1Mhz, $_{GE}$=0V)

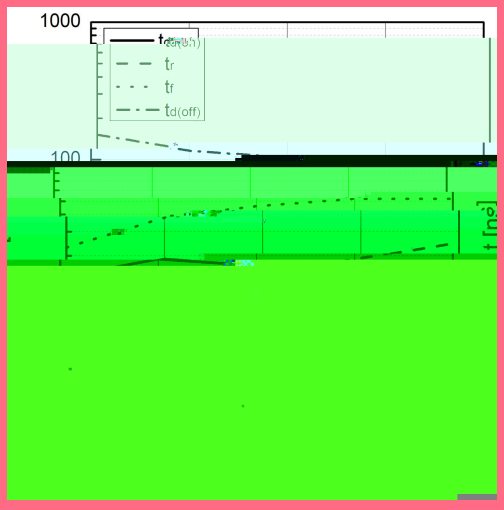


Fig 10. Typical switching times as a function of $_{C}$

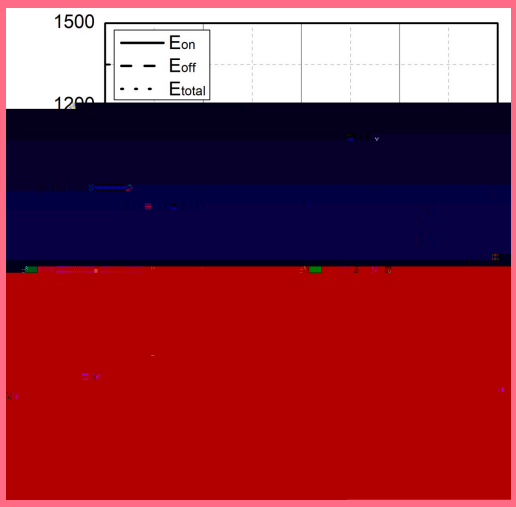


Fig 11. Typical switching energy losses as a function of $_{C}$

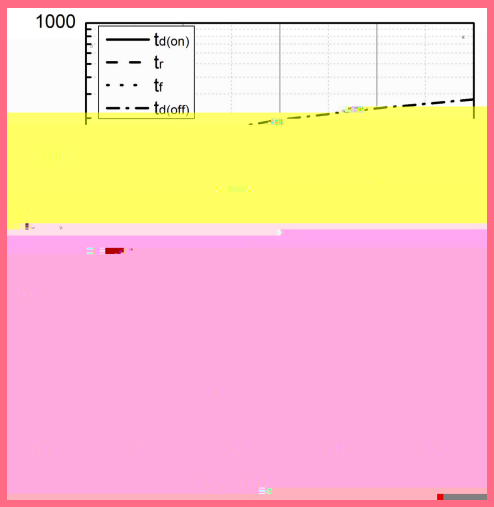


Fig 12. Typical switching times as a function of $_{G}$

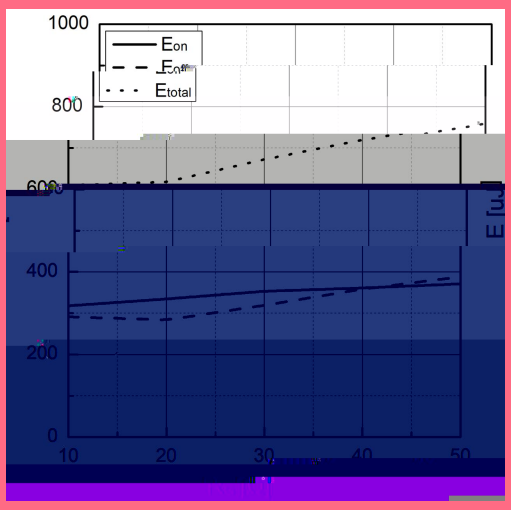


Fig 13. Typical switching energy losses as a function of $_G$

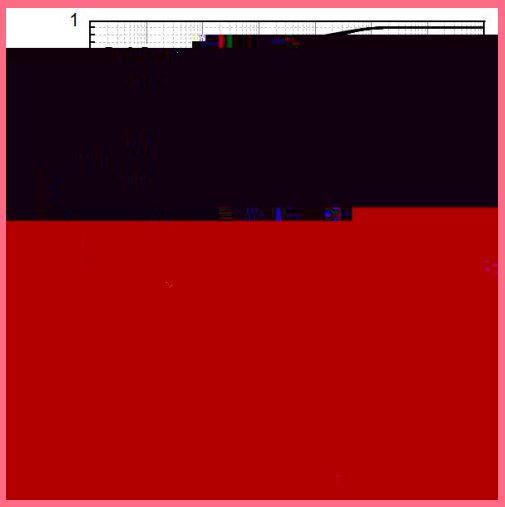


Fig 14. Transient thermal impedance, IGBT



A

Date	Revision	Changes
2023-11-01	Rev 1.0	Release of the datasheet
2025-04-08	Rev 1.1	Character Update
2026-06-24	Rev 1.2	Update thermal

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