JJMICROELECTRONICS

650V 15A Trench and Field Stop IGBT

JJT15N65SS

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

- High ruggedness performance.
- 10μs short circuit capability.
- Positive $_{CE\ (sat)}$ temperature coefficient.
- High efficienc

V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	±20	V
I_C	Continuous collector current (T_C=25)	30	A
	Continuous collector current (T_C=100)	15	A
I_{CM}	Pulsed collector current, t_p limited by T_{vjmax}	60	A
I_F	Diode continuous forward current (T_C=100)		

n voltage	V_{GE}=0V, I_C=250µA	650	-	-	V
urrent	V_{CE}=650V, V_{GE}=0V	-	-	50	µA

Switching characteristics

$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=15A R_G=10 Inductive load	-	17	-	ns
t_r	Rise time		-	14	-	ns
$t_{d(off)}$	Turn-off delay time		-	104	-	ns
t_f	Fall time		-	46	-	ns
E_{on}	Turn-on energy		-	0.30	-	mJ
E_{off}	Turn-off energy		-	0.27	-	mJ
E_{ts}	Total switching energy		-	0.57	-	mJ
$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=15A R_G=10 Inductive load T_{vj}=175	-	17	-	ns
t_r	Rise time		-	15	-	ns
$t_{d(off)}$	Turn-off delay time		-	123	-	ns
t_f	Fall time		-	82	-	ns
E_{on}	Turn-on energy		-	0.39	-	mJ
E_{off}	Turn-off energy		-	0.42	-	mJ
E_{ts}	Total switching energy		-	0.81	-	mJ

($_{vj}$=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

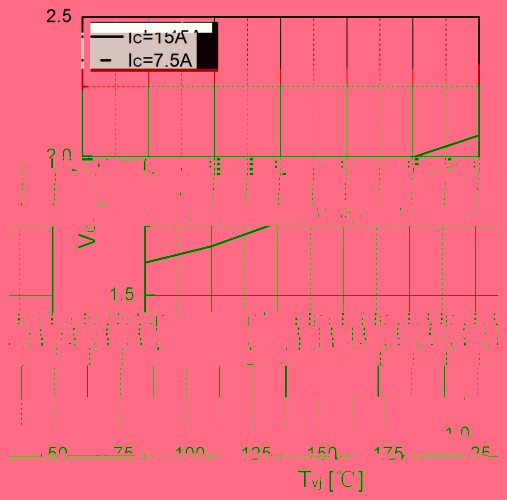


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

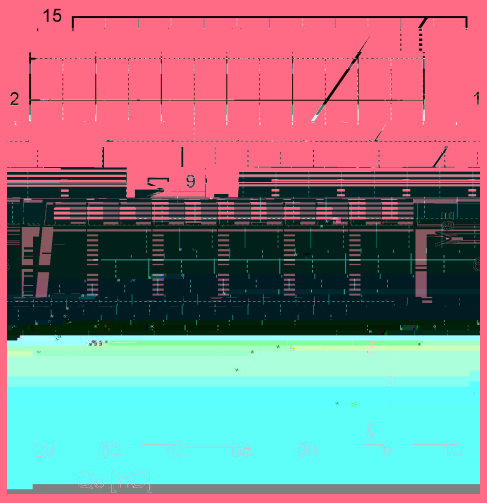


Fig 8. Typical Gate charge

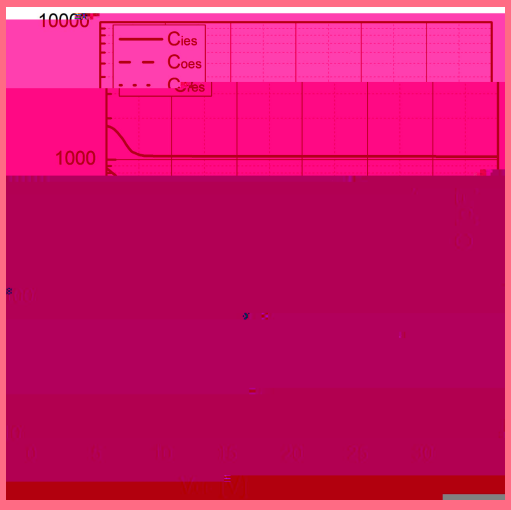


Fig 9. Typical capacitance as a function of $_{CE}$ (=1Mhz, $_{GE}$=0V)

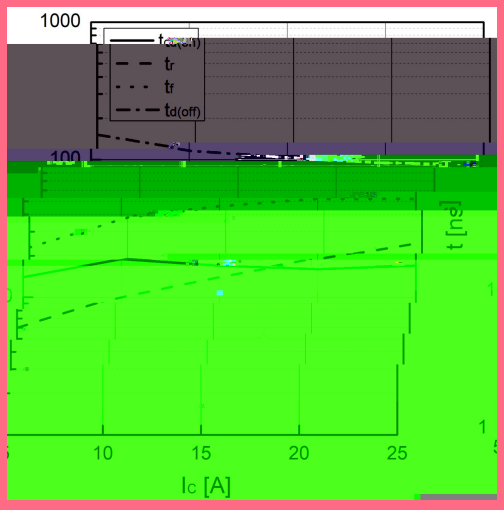


Fig 10. Typical switching times as a function of $_{C}$

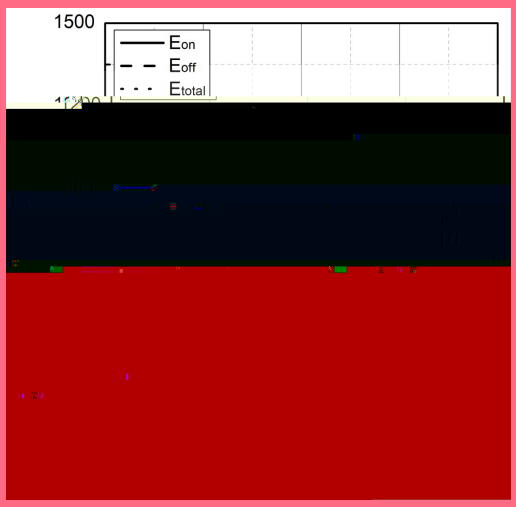


Fig 11. Typical switching energy losses as a function of $_{C}$

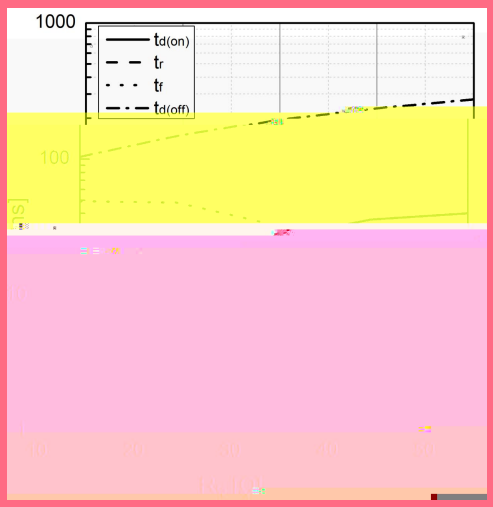
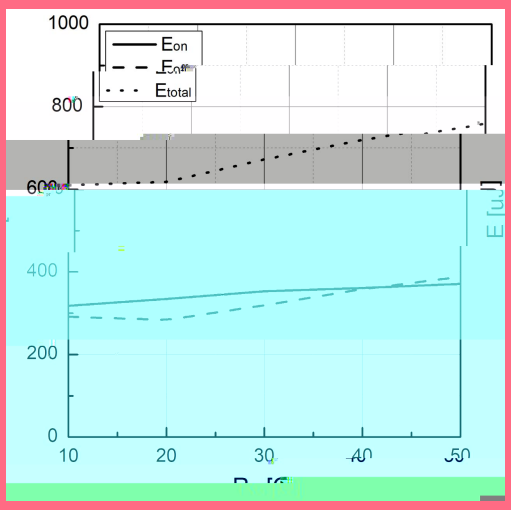
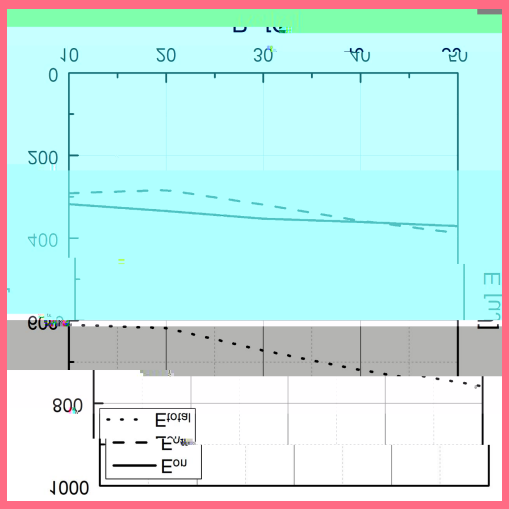


Fig 12. Typical switching times as a function of $_{G}$





Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50	-	4.90	0.177	-	0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47	-	0.66	0.019	-	0.026
C2	2.45	-	2.75	0.096	-	0.108
C3	2.60	-	3.00	0.102	-	0.118
D	8.80	-	9.30	0.346	-	0.366
E	9.80	-	10.40	0.386	-	0.410
F	6.40	-	6.80	0.252	-	0.268
G	2.40	-	2.70	0.09-		

Date	Revision	Changes
2023-11-27	Rev 1.1	Update
2024-03-18	Rev 1.2S	