

650V 15A Trench and Field Stop IGBT

JJT15N65SC





CES	Collector-emitter voltage	650	V
GES	Gate-emitter voltage	±20	V
C	Continuous collector current ($T_c=25^\circ\text{C}$)	30	A
	Continuous collector current ($T_c=100^\circ\text{C}$)	15	A
CM	Pulsed collector current, I_p limited by v_{jmax}	60	A
F	Diode continuous forward current ($T_c=100^\circ\text{C}$)	15	A
FM	Diode maximum current, I_p limited by v_{jmax}	60	A
sc	Short circuit withstand time	10	μs
tot	Power dissipation ($T_c=25^\circ\text{C}$)	150	W
	Power dissipation ($T_c=100^\circ\text{C}$)	75	W
vj	Operating junction temperature range	-40 to +175	
stg	Storage temperature range	-55 to +150	

th(j-c)	Thermal resistance, junction to case for IGBT	-	1.0	K/ W
th(j-c)	Thermal resistance, junction to case for Diode	-	1.5	K/ W
th(j-a)	Thermal resistance, junction to ambient	-	60	K/ W



V_{CES}	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=250\mu A$	650	-	-	V
I_{CES}	Collector-emitter leakage current	$V_{CE}=650V, V_{GE}=0V$	-	-	50	μA
	Gate leakage current, forward	$V_{GE}=20V, V_{CE}=0V$	-	-	100	nA
I_{GES}	Gate leakage current, reverse	$V_{GE}=-20V, V_{CE}=0V$	-	-	-100	nA
$V_{GE(th)}$	Gate-emitter threshold voltage	$V_{GE}=V_{CE}, I_C=1mA$	5.1	5.6	6.1	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$V_{GE}=18V, I_C=10A$	1.8	1.8	1.8	V



Switching characteristics

			V _{GS} = 10V			
			V _{CE}	I _C	V _{CE(sat)}	
d(on)	Turn-on delay time	CC=400V GE=0/15V C=15A G=10 Inductive load	-	17	-	ns
r	Rise time		-	14	-	ns
d(off)	Turn-off delay time		-	104	-	ns
f	Fall time		-	46	-	ns
on	Turn-on energy		-	0.30	-	mJ
off	Turn-off energy		-	0.27	-	mJ
ts	Total switching energy		-	0.57	-	mJ
d(on)	Turn-on delay time	CC=400V GE=0/15V C=15A G=10 Inductive load v _j =175	-	17	-	ns
r	Rise time		-	15	-	ns
d(off)	Turn-off delay time		-	123	-	ns
f	Fall time		-	82	-	ns
on	Turn-on energy		-	0.39	-	mJ
off	Turn-off energy		-	0.42	-	mJ
ts	Total switching energy		-	0.81	-	mJ

($v_j=25$ unless otherwise specified)

F	Diode forward voltage	$I_F=15A$	-	1.4	-	V
		$I_F=15A, v_j=175$	-	1.1	-	V
t_{rr}	Diode reverse recovery time	$V_R=400V$ $I_F=15A$ $d I_F/d t =-600A/\mu s$	-	55	-	ns
I_{rrm}	Diode peak reverse recovery current		-	9.5	-	A
Q_{rr}	Diode reverse recovery charge		-	220	-	nC
t_{rr}	Diode reverse recovery time	$V_R=400V$ $I_F=15A$ $d I_F/d t =-600A/\mu s$ $v_j=175$	-	77	-	ns
I_{rrm}	Diode peak reverse recovery current		-	15	-	A
Q_{rr}	Diode reverse recovery charge		-	481	-	nC



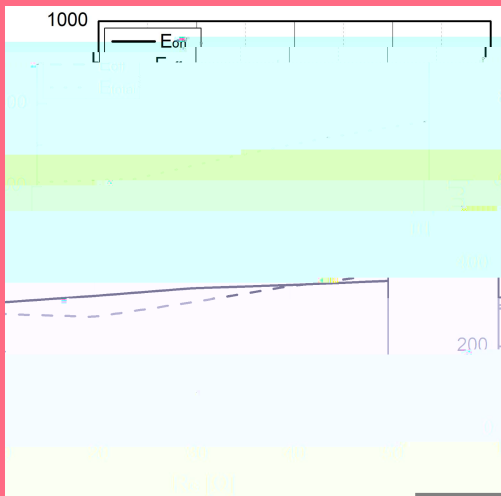


Fig 13. Typical switching energy losses as a function of f_G

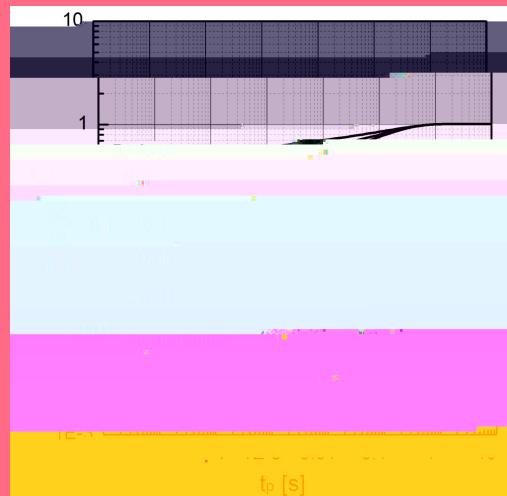


Fig 14. Transient thermal impedance, IGBT



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90	-	1			



Date	Revision	Changes
2023-11-01	Rev 1.0	Release of the datasheet
2025-04-08	Rev 1.1	Character Update

PLEASE NOTE - Jiangsu JieJie Microelectronics Co., Ltd ("JJM") reserves the right to amend, correct, modify