JJMICROELECTRONICS

650V 75A Trench and Field Stop IGBT

JJT75N65HCN

Key performance:

- V_{CE} =650V
- I_C=75A@T_C=100
- $V_{CE(sat)}$=1. ; .

Symbol	Parameter	Values	Unit
V_{CES}	Collector-emitter voltage	650	V
V_{GE}			

All d c i f a i i c igh ed a d bjec legal di clai e .

Electrical characteristics of IGBT (T_{vj}=25 unless otherwise specified)

Static characteristics

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
BV_{CES}	Collector-emitter breakdown voltage	V_{GE}=0V, I_C=250μA	650	-	-	V
I_{CES}	Collector-emitter leakage current	V_{CE}=650V, V_{GE}=0V	-	-	50	μA
I_{GES}	Gate leakage current, forward	V_{GE}=20V, V_{CE}=0V	-	-	100	nA
	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	5.0	5.4	5.6	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	V_{GE}=15 V, I_C=75A	-	1.8	-	V
		V_{GE}=15V, I_C=75A, T_{vj} =175	-	2.3	-	V

Dynamic characteristics

Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
C_{ies}	Input capacitance	V_{CE}=30V V_{GE}=0V f=1MHz	-	4250	-	pF
C_{oes}	Output capacitance		-	205	-	pF
C_{res}	Reverse transfer capacitance		-	31	-	pF
Q_g	Total gate charge	V_{CC}=520V V_{GE}=15V I_C=75A	-	130	-	nC

All d c i f ai i c igh ed a d bjec legal di clai e .

Typical performance characteristics

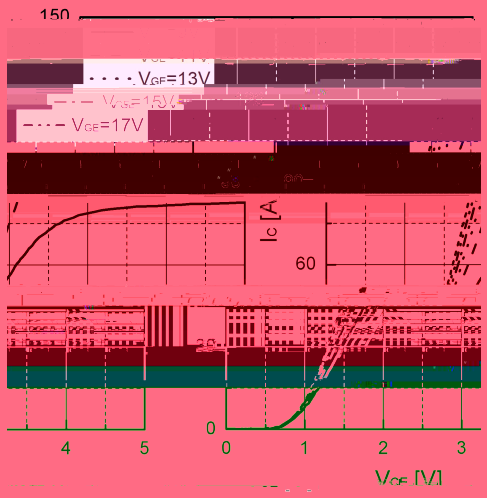


Fig 1. Typical output characteristic (T_{vj}=25)



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

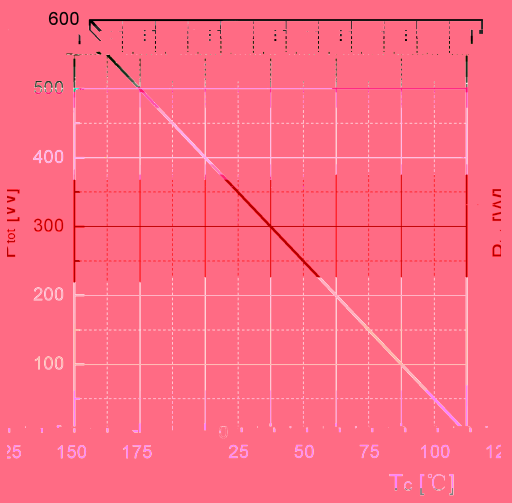


Fig 3. Power dissipation as a function of T_C

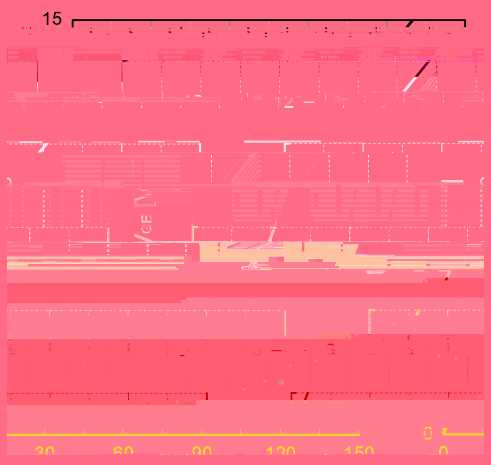
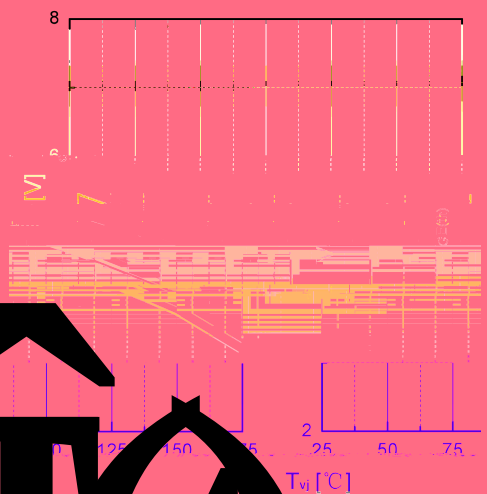
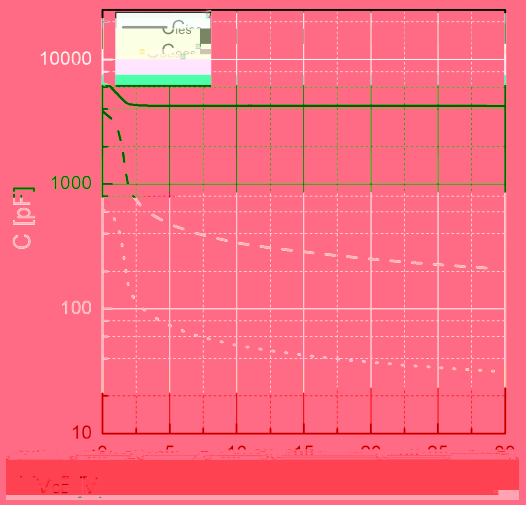


Fig 4. Typical gate charge



g 5 pical V n function of T_{vj}



ll d a i i ed a bjec di clai e .

Typical performance characteristics

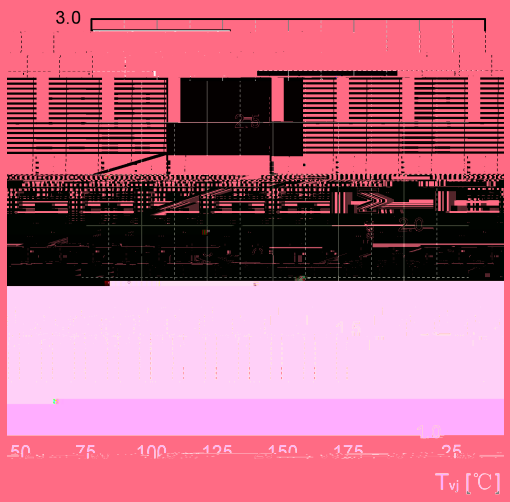


Fig 7. Typical V_{CEsat} as a function of T_{vj}

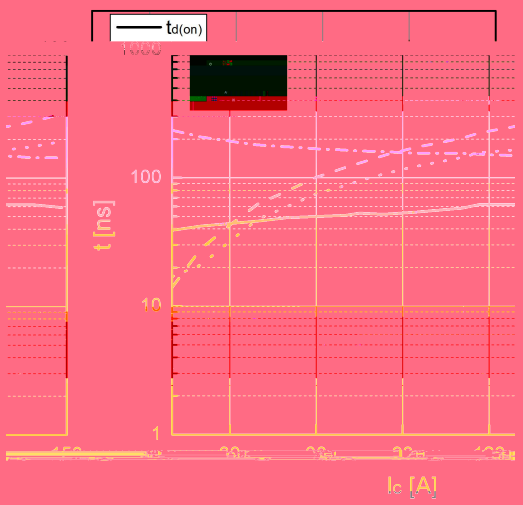


Fig 8. Typical switching time as a function of I_C

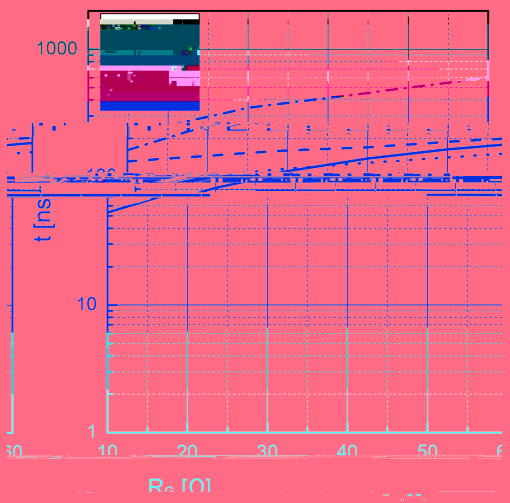


Fig 9. Typical switching times as a function of R_G

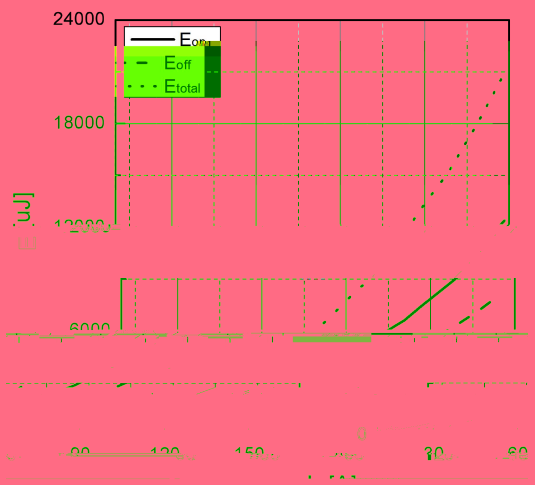


Fig 10. Typical switching energy losses as a function of I_C

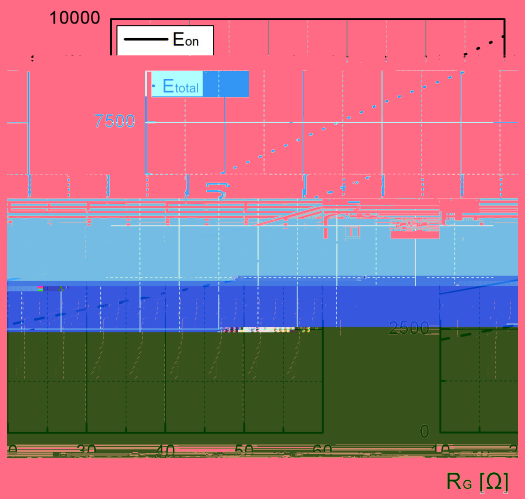


Fig 11. Typical switching energy losses as a function of R_G

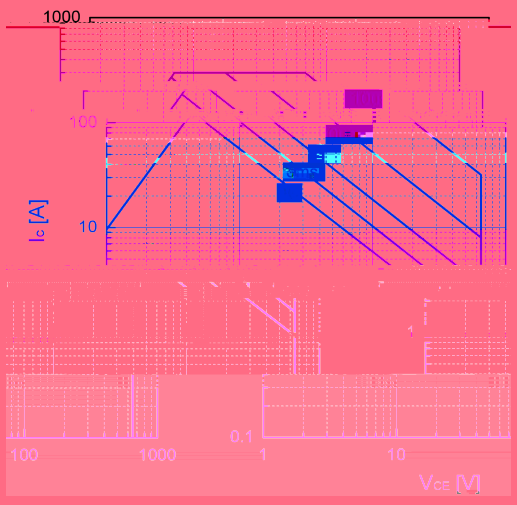


Fig 12. Safe operating area

All d c i f a i i c igh ed a d bjec legal di clai e .

Typical performance characteristics

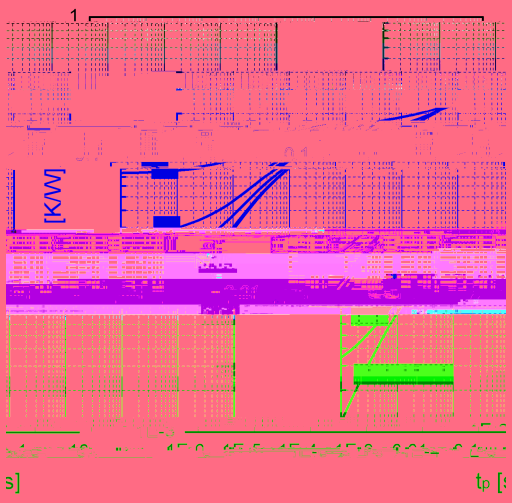
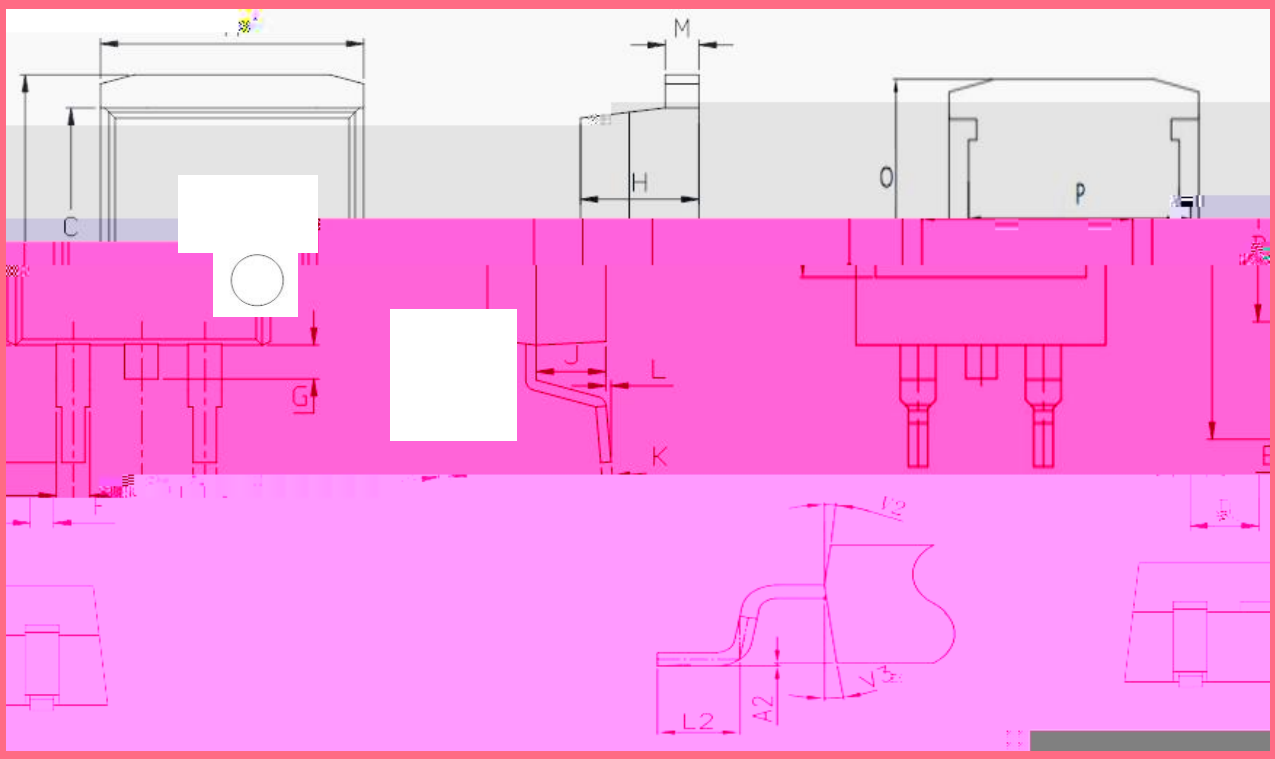


Fig 13. Transient thermal impedance, IGBT

All d c i f ai i c igh ed a d bjec legal di clai e .

Package dimension

TO-263



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90	-	10.20	0.390	-	0.402
B	14.70	-	15.80	0.579	-	0.622
C	8.8	-	9.4	0.346	-	0.370
D	-	2.54	-	-	0.100	-
E	1.37	-	1.57	0.054	-	0.062
F	0.75	-	0.85	0.029	-	0.033
G	-	-	1.75	-	-	0.069
H	4.30	-	4.70	0.169	-	0.185
J	2.30	-	2.70	0.091	-	0.106
K	0.38	-	0.55	0.015	-	0.022
L	0	0.15	0.25	0	0.006	0.010
M	1.25	-	1.35	0.049	-	0.053
O	7.4	7.65	7.9	0.291	0.301	0.311
P	8.3	8.6	8.9	0.327	0.339	0.350
L2	2.20	2.35	2.50	0.087	0.093	0.098

All d c i f ai i c igh ed a d bjec legal di clai e .

Revision history

Date	Revision	Changes
2024-03-20	Rev 1.2	Update
2024-08-20	Rev 2.0	Update
2024-09-12	Rev 2.1	Update
2026-03-12	Rev 2.2	Update POD

Disclaimer

PLEASE NOTE - Jiangsu JieJie Microelectronics Co., Ltd ("JJM") reserves the right to amend, correct, modify and enhance the product and/or this document at any time without prior notice. If you intend to purchase this product, please obtain the latest information available before placing your order. The sale of JJM products is governed by JJM's prevailing terms and conditions at the time of purchase and purchasers are solely responsible for the selection and use of the products with no liability on JJM's part to supply application assistance or customization. Purchase of JJM products does not grant the purchaser license, express or implied, to JJM's intellectual property. Any warranties provided with JJM products are null and void upon resale unless accompanied by the information set forth herein in its entirety. The JJM name and logo are registered trademarks of Jiangsu JieJie Microelectronics Co., Ltd. This document supersedes all previous versions. ©2024 JJM - All rights reserved

All d c i f ai i c igh ed a d bjec legal di clai e .