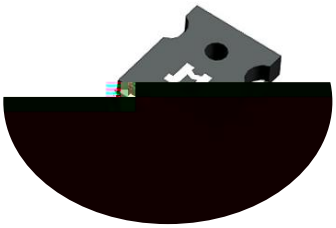
650V 50A Trench and Field Stop IGBT

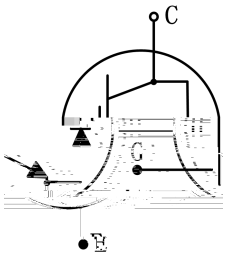
JJT50N65LE

- $_{CE}$ =650V
- $_{C}$=50A@ $_{C}$=100
- $_{CE(sat)}$=1.5V

TO-247



- Trench and field-stop technology.
- Easy parallel switching capability.



- High ruggedness performance.
- RoHS compliant.

- Inducting heating
- Resonant converters
- Microwave ovens

Type	Marking	Package	Packaging Method
JJT50N65LE	T5065LE	TO-247	Tube

All product information is copyrighted and subject to legal disclaimers.

V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	±20	V
I_C	Continuous coll		

All product information is copyrighted and subject to legal disclaimers.

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

Static characteristics

$_{CES}$	Collector-emitter breakdown voltage	$_{GE}$=0V, I_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	4.5	5.0	5.5	V
$_{CE(sat)}$	Collector-emitter saturation voltage	$_{GE}$=15 V, $_{C}$=50A	-	1.5	-	V
		$_{GE}$=15V, $_{C}$=50A, $_{vj}$=175	-	1.8	-	V

Dynamic characteristics

$_{ies}$	Input capacitance	$_{CE}$=30V $_{GE}$=0V =1MHz	-	5916	-	pF
$_{oes}$	Output capacitance		-	146	-	pF
$_{res}$	Reverse transfer capacitance		-	32	-	pF
$_{g}$	Total gate charge	$_{CC}$=520V $_{GE}$=15V $_{C}$=50A	-	200	-	nC

All product information is copyrighted and subject to legal disclaimers.

All product information is copyrighted and subject to legal disclaimers.

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

$_{F}$	Diode forward voltage	$_{F}$=50A	-	1.6	-	V
		$_{F}$=50A, $_{vj}$=175	-	1.3	-	V
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=50A d $_{F}$/d =-200A/μs	-	90	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	5.6	-	A
$_{rr}$	Diode reverse recovery charge		-	289	-	nC
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=50A d $_{F}$/d =-200A/μs $_{vj}$=175	-	203	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	17	-	A
$_{rr}$	Diode reverse recovery charge		-	1954	-	nC

All product information is copyrighted and subject to legal disclaimers.

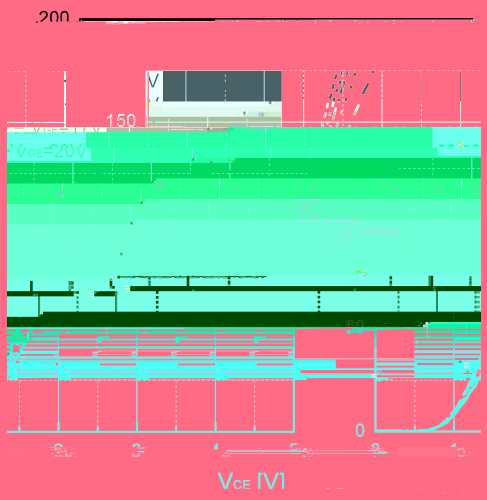


Fig 1. Typical output characteristic (vj=25)

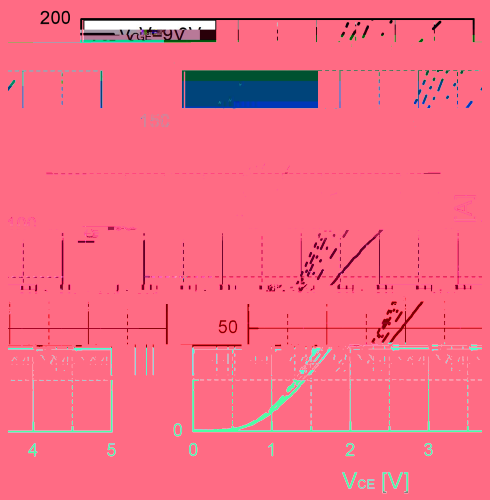


Fig 2. Typical output characteristic(vj=175)

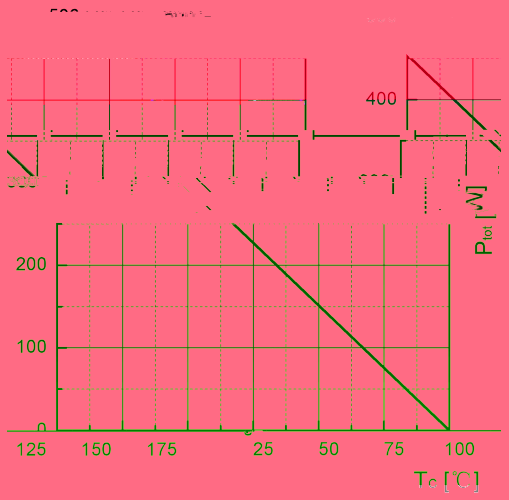


Fig 3. Power dissipation as a function of

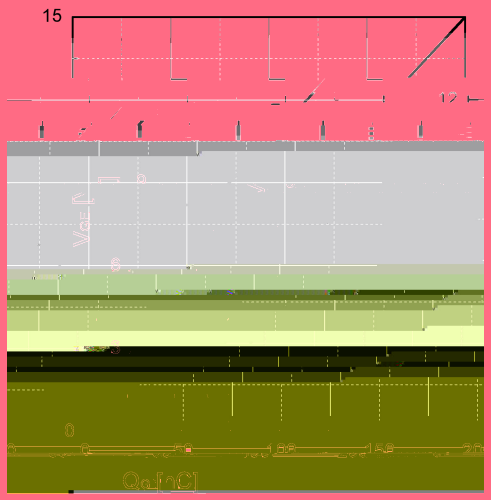


Fig 4. Typical Gate charge

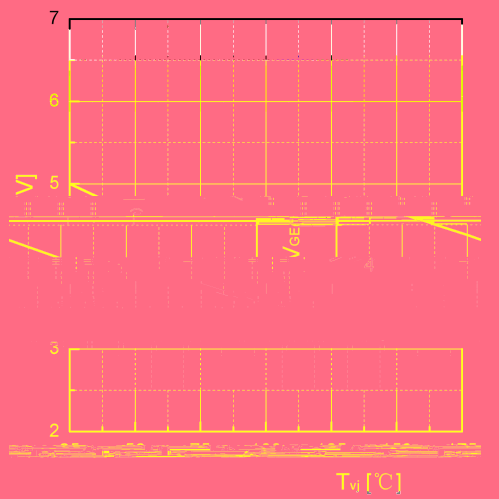
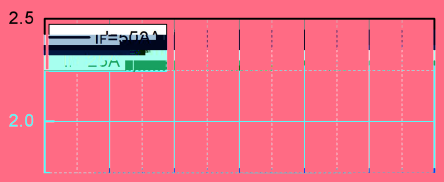


Fig 5. Typical GE(th) as a function of vj (C=1mA)



All product information is copyrighted and subject to legal disclaimers.

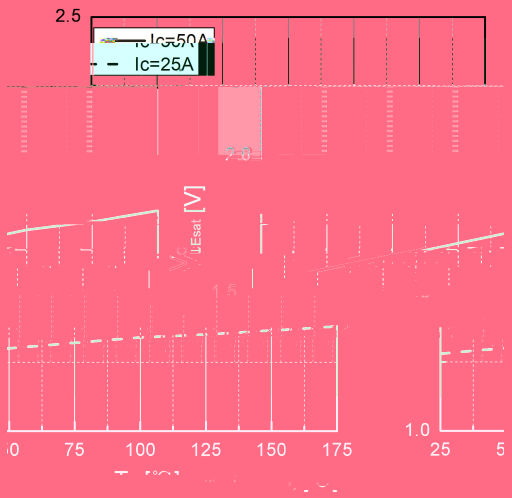


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

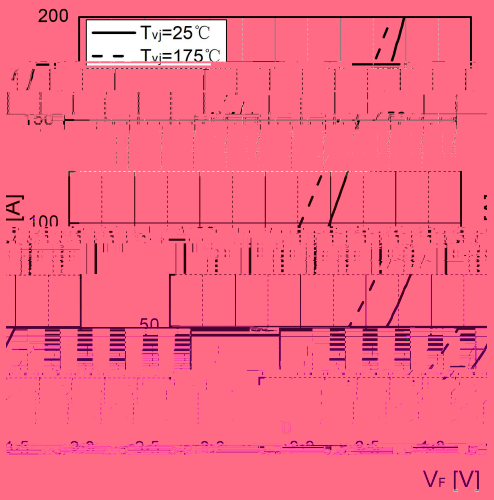


Fig 8. Typical $_{F}$ as a function of $_{F}$

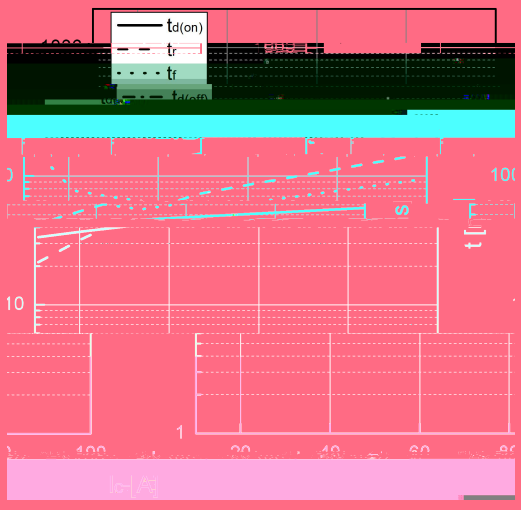


Fig 9. Typical switching time as a function of $_{C}$

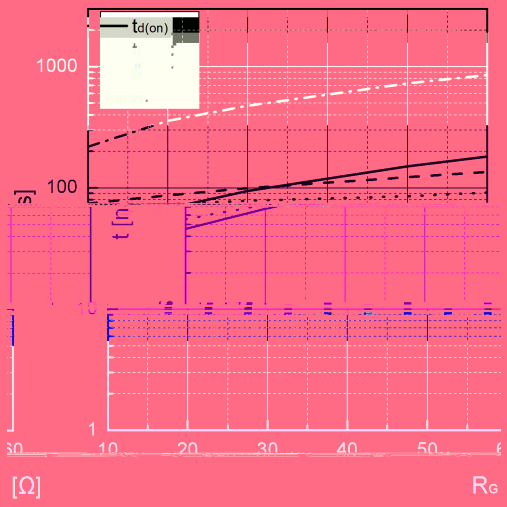


Fig 10. Typical switching times as a function of $_{G}$

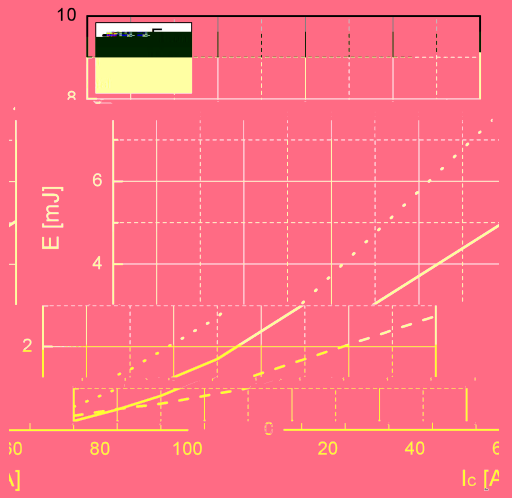


Fig 11. Typical switching energy losses as a function of $_{C}$

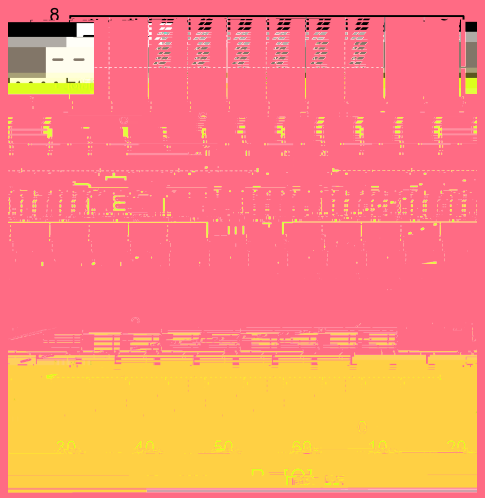


Fig 12. Typical switching energy losses as a function of $_{G}$

All product information is copyrighted and subject to legal disclaimers.

All product information is copyrighted and subject to legal disclaime - ﻩﺎﺧ

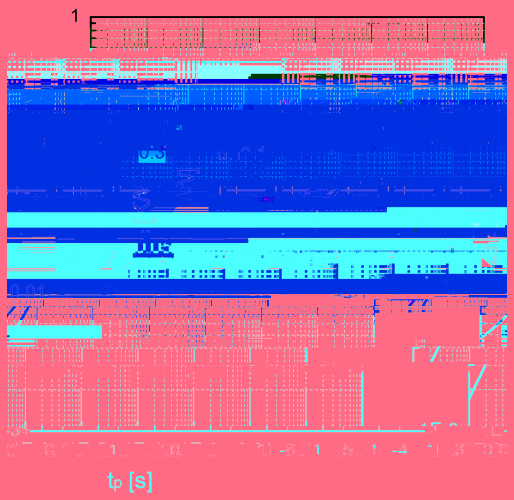
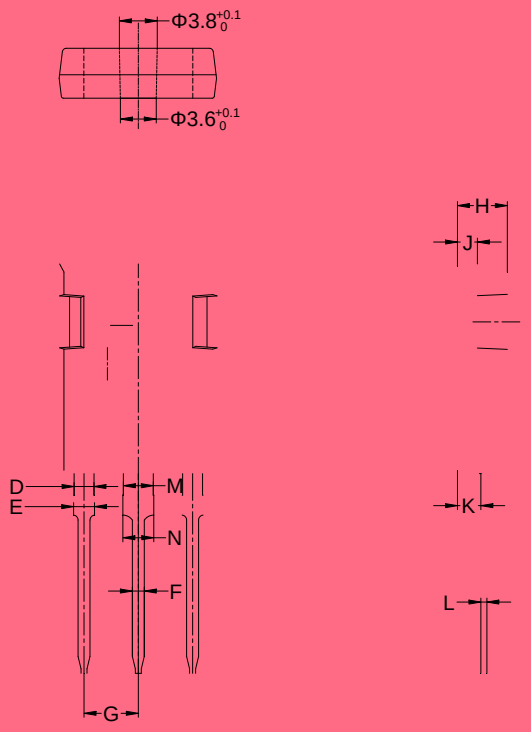


Fig 19. Transient thermal impedance of IGBT

All product information is copyrighted and subject to legal disclaimers.

TO-247



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	21.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G	5.25	-	5.65	0.207	-	0.222
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031
M	2.80	3.00	3.20	0.110	0.118	0.126
N	2.90	3.10	3.30	0.114	0.122	0.130

All product information is copyrighted and subject to legal disclaimers.

Date	Revision	Changes
2024-11-18	Rev 1.1	Add graph and character update
2025-01-18	Rev 1.2	Add SOA and Rth graph
2025-04-30	Rev 1.3	Character Update

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. ©2025 JJM - All rights reserved