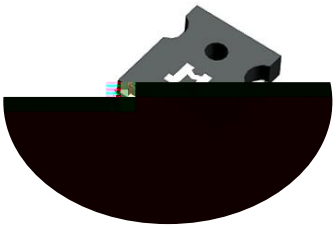
JJMICROELECTRONICS

650V 30A T e c a d F e d S IGBT

JJT30N65UK

- $_{CE}$ =650V
- $_{C}$=30A@ $_{C}$=100
- $_{CE(sat)}$=1.8V

TO-247i-3L



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

- High efficiency for inverters.
- High ruggedness performance.
- RoHS compliant.

- PFC applications
- Welding machines

Type	Marking	Package	Packaging Method
JJT30N65UK	T3065UK	TO-247i( )	Tube

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V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	±20	V
I_C	Continuous collector current (T_C=25)	60	A
	Continuous collector current (T_C=100)	30	A
I_{CM}	Pulsed collector current, t_p limited by T_{vjmax}	120	A
I_F	Diode continuous forward current (T_C=100)	30	A
I_{FM}	Diode maximum current, t_p limited by T_{vjmax}	120	A
P_{tot}	Power dissipation (T_C=25)	174	W

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$_{CES}$	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	4.0	5.0	6.0	

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Switching characteristics

$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=30A R_G=10 Inductive load	-	25	-	ns
t_r	Rise time		-	37	-	ns
$t_{d(off)}$	Turn-off delay time		-	110	-	ns
t_f	Fall time		-	30	-	ns
E_{on}	Turn-on energy		-	0.7	-	mJ
E_{off}	Turn-off energy		-	0.3	-	mJ
E_{ts}	Total switching energy		-	1.0	-	mJ
$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=30A R_G=10 Inductive load T_{vj}=175	-	23	-	ns
t_r	Rise time		-	36	-	ns
$t_{d(off)}$	Turn-off delay time		-	135	-	ns
t_f	Fall time		-	52	-	ns
E_{on}	Turn-on energy		-	0.8	-	mJ
E_{off}	Turn-off energy		-	0.5	-	mJ
E_{ts}	Total switching energy		-	1.3	-	mJ

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		$_F$=30A	-	2.2	- V
$_F$	Diode forward voltage	$_F$=30A, $_{vj}$=175	-	1.55	- V

rr

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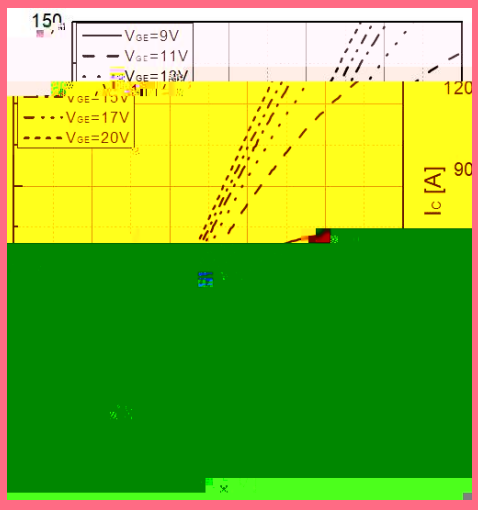


Fig 1. Typical output characteristic (vj=25)

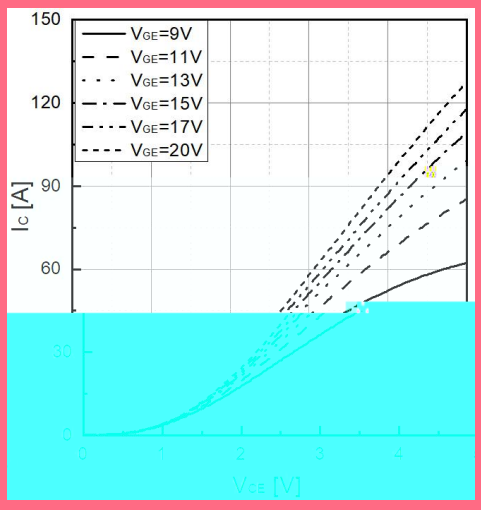


Fig 2. Typical output characteristic (vj=175)

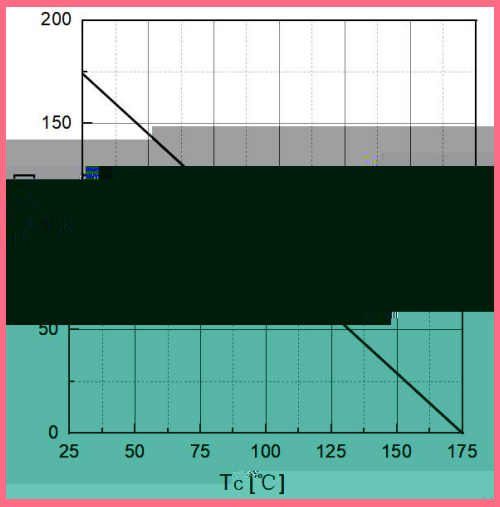


Fig 3. Power dissipation as a function of

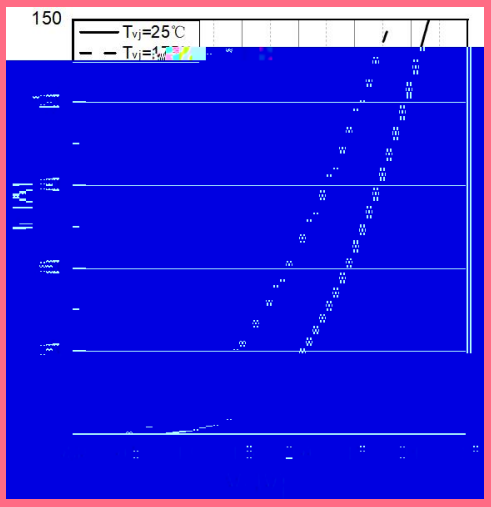


Fig 4. Typical F as a function of F

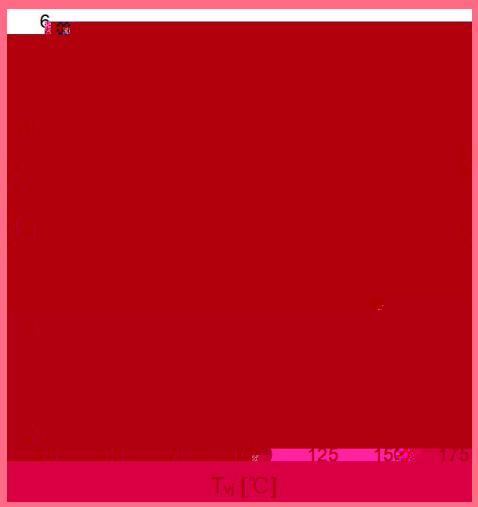


Fig 5. Typical GE(th) as a function of vj

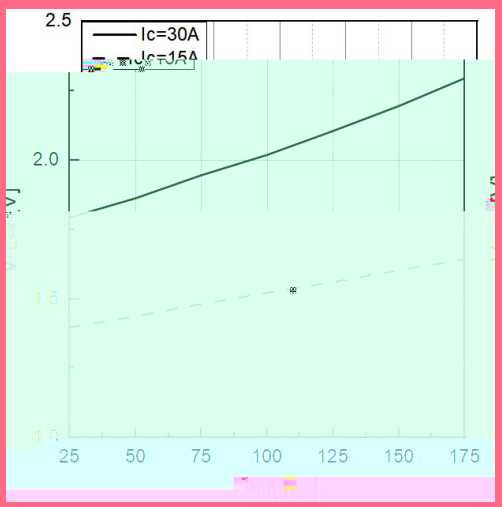


Fig 6. Typical CEsat as a function of vj

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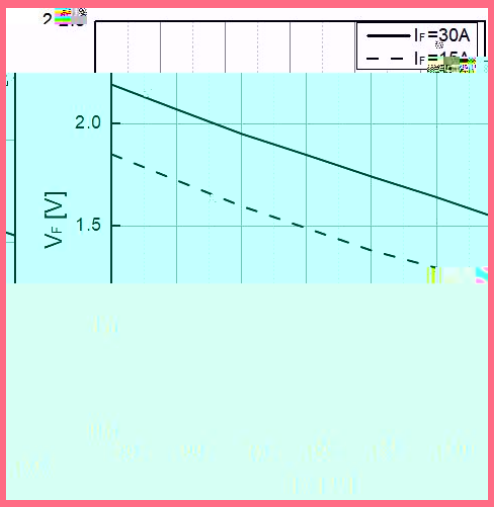


Fig 7. Typical $_{F}$ as a function of $_{vj}$

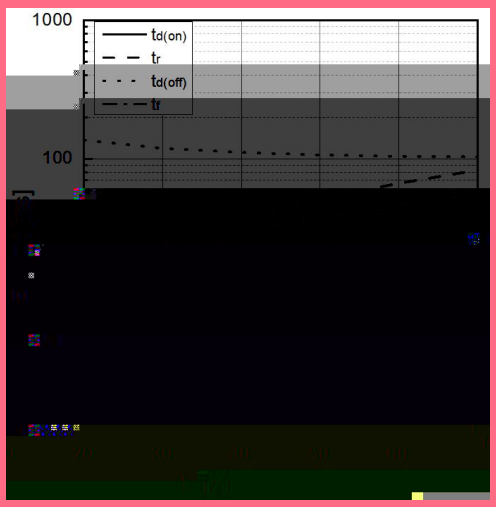


Fig 8. Typical switching time as a function of $_{C}$

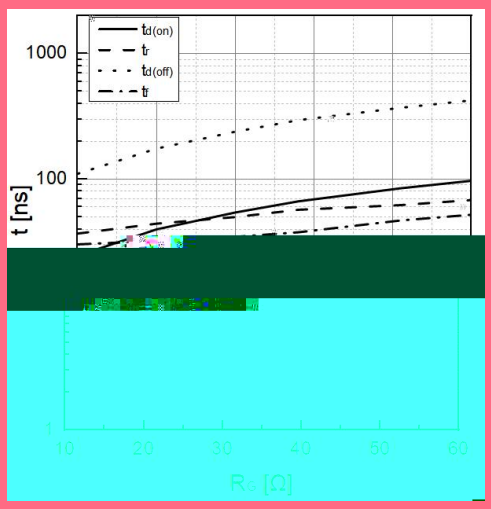
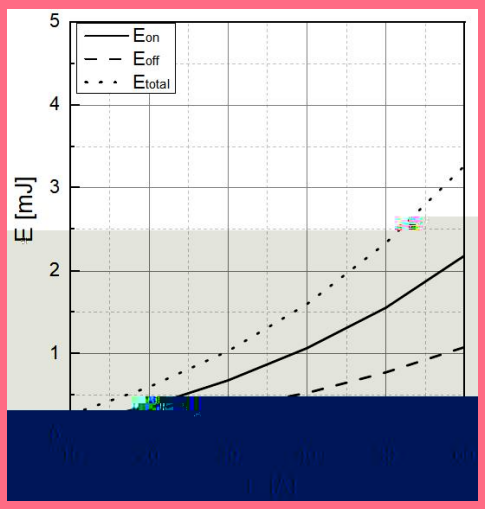


Fig 9. . pical



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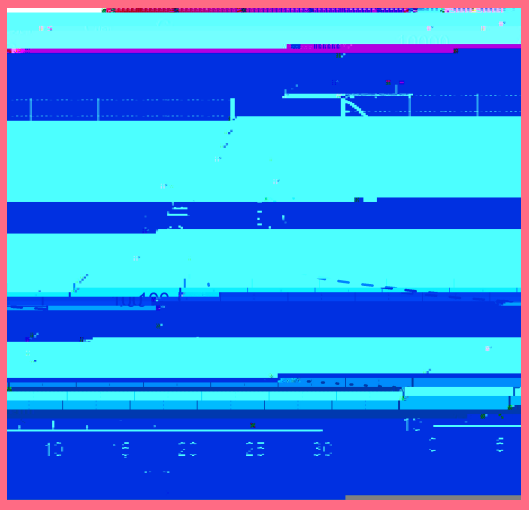


Fig 13. Typical capacitance as a function of $_{CE}$ (f=1Mhz, $_{GE}$=0V)

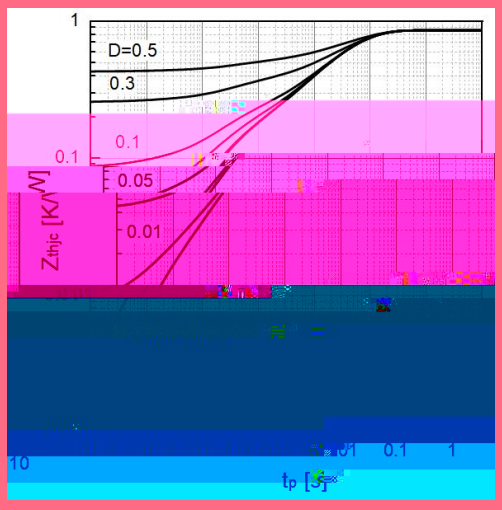


Fig 14. Transient thermal impedance of IGBT

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Dimensions						
Ref.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.95	16.00	16.05	0.627	0.629	0.631
B	21.85	21.90	21.92	0.860	0.862	0.864
B1	5.15	5.20	5.25	0.202	0.204	0.206
B2	4.32	4.37	4.42	0.170	0.172	0.174
C	19.01	19.11	19.21	0.748	0.752	0.756
D	2.07	2.10	2.13	0.081	0.082	0.083
E	3.07	3.10	3.13	0.120	0.122	0.123
F	1.15	1.20	1.25	0.045	0.0	.

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Date	Revision	Changes
2024-10-30	Rev 1.0	Release of the preliminary datasheet.
2026-04-30	Rev 1.1	Update thermal.
2026-09-02	Rev 1.2	Update with full characterization

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