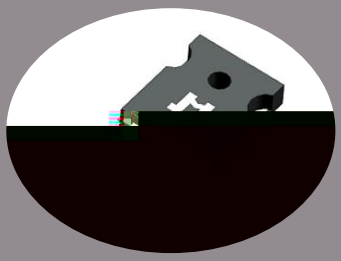
650V 50A Trench and Field Stop IGBT

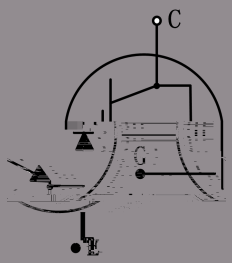
JJT50N65UK

- $_{CE}$ =650V
- $_{C}$=50A@ $_{C}$=100
- $_{CE(sat)}$=1.7V

TO-247i



- 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
JJT50N65UK	T0	b b ìi	TÈwe

$_{CES}$	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	5.1	5.4	HD	

$t_{d(on)}$	Turn-on delay time		-	44	-	ns
t_r	Rise time		-	100	-	ns
$t_{d(off)}$	Turn-off delay time	V_{CC}=400V V_{GE}=0/15V	-	166	-	ns
t_f	Fall time	I_C=50A R_G=10	-	75	-	ns
E_{on}	Turn-on energy	Inductive load	-	1.7	-	mJ
E_{off}	Turn-off energy		-	0.9	-	mJ
E_{ts}	Total switching energy		-	2.6	-	mJ
$t_{d(on)}$	Turn-on delay time					

V_{CC}=400V
V_{GE}=0/15V
I_C=50A

T B H

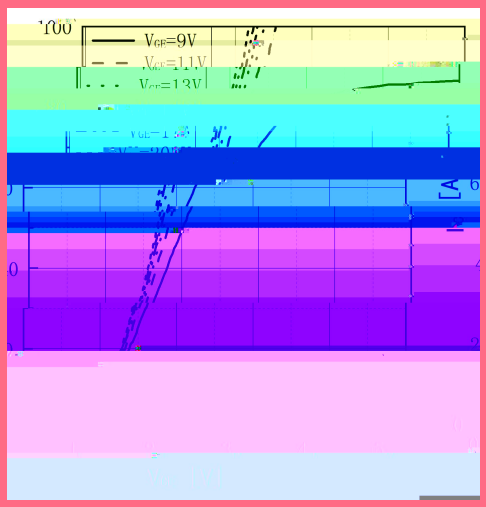


Fig 1. Typical output characteristic (vj=25)

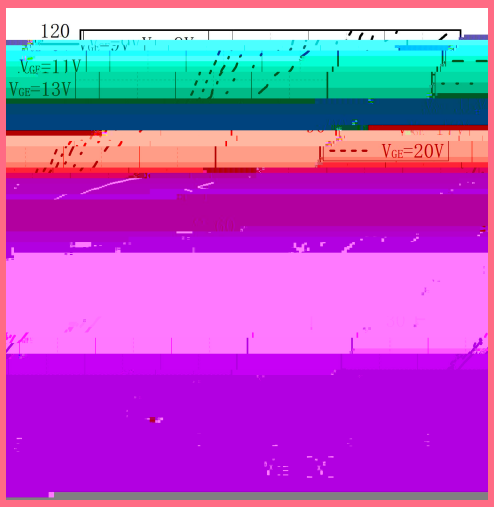


Fig 2. Typical output characteristic(vj=175)

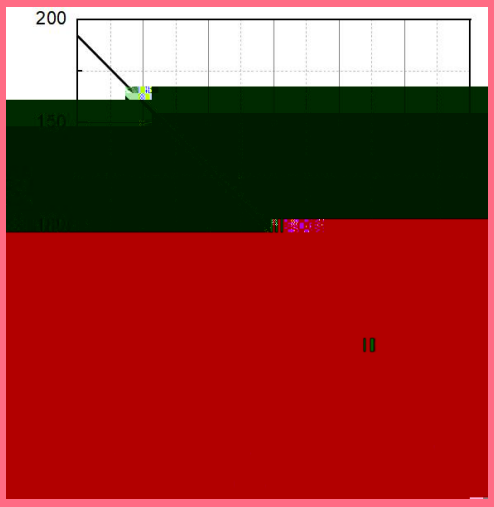


Fig 3. Power dissipation as a function of

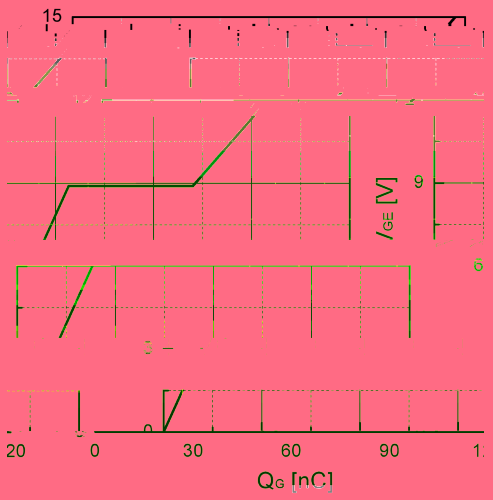


Fig 4. Typical Gate charge

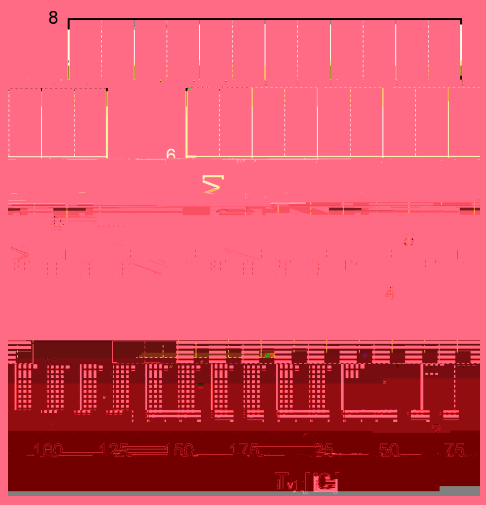


Fig 5. Typical GE(th) as a function of vj (C=1mA)

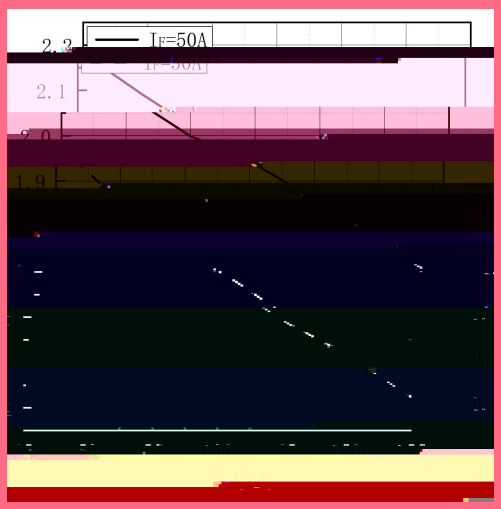


Fig 6. Typical F as function of vj

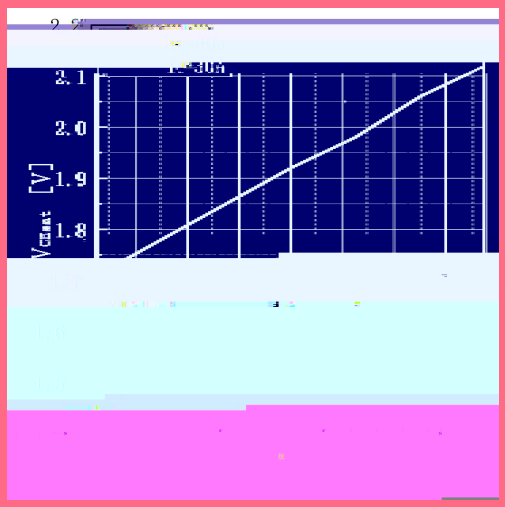


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

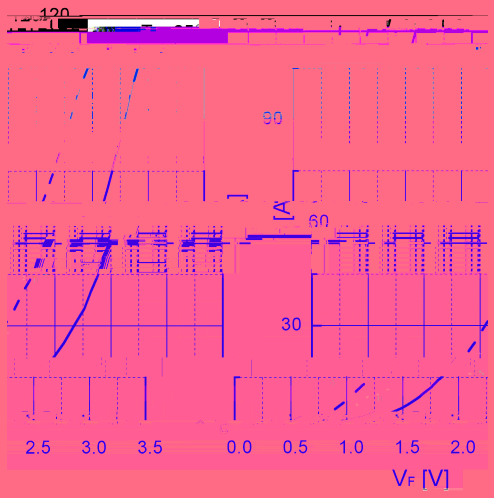
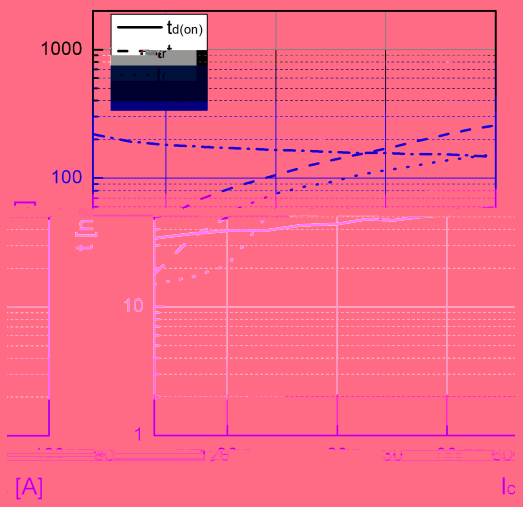


Fig 8. Typical $_{F}$ as a function of $_{F}$



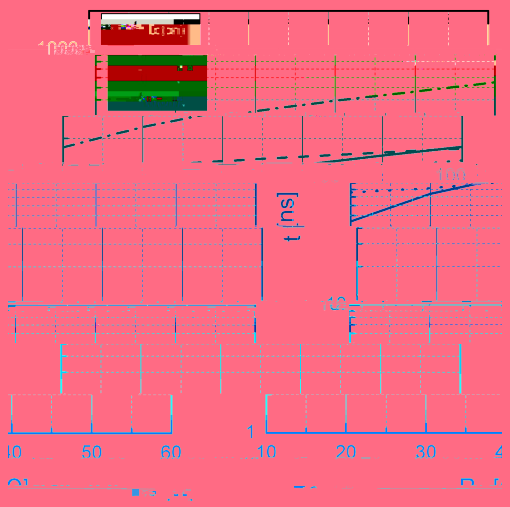


Fig 9. Typical switching time as a

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	0.0	

Date	Revision	Changes
2025-05-17	Rev A.1.2	Update