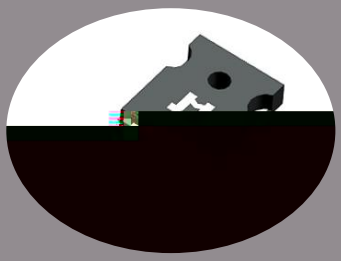
650V 40A Trench and Field Stop IGBT

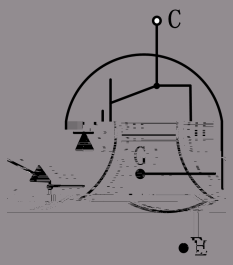
JJT40N65LE

- V_{CE}=650V
- I_C=40A@ T_C=100
- $V_{CE(sat)}$=1.4V

TO-247



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



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

- EV chargers

Type	Marking	Package	Packaging Method
JJT40N65LE	T4065LE	TO-247	Tube

$t_{d(on)}$ Turn-on delay time

V_{CC}=400V

V_{GE}=0/15V

I_C=40A

R_G=10

Inductiveveve

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

$_{F}$	Diode forward voltage	$_{F}$=40A	-	1.4	-	V
		$_{F}$=40A, $_{vj}$=175	-	1.2	-	V
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=40A d $_{F}$/d =-400A/μs	-	194	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	12	-	A
$_{rr}$	Diode reverse recovery charge		-	1803	-	nC
$_{rr}$	Diode reverse recovery time	$_{R}$=400V $_{F}$=40A d $_{F}$/d =-400A/μs $_{vj}$=175	-	305	-	ns
$_{rrm}$	Diode peak reverse recovery current		-	22	-	A
$_{rr}$	Diode reverse recovery charge		-	3466	-	nC

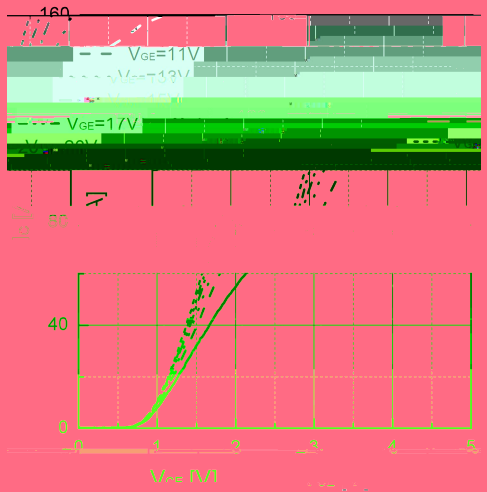


Fig 1. Typical output characteristic ($_{vj}$=25)

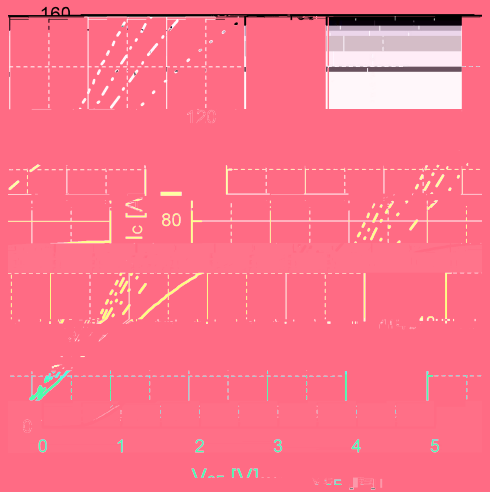


Fig 2. Typical output characteristic($_{vj}$=175)

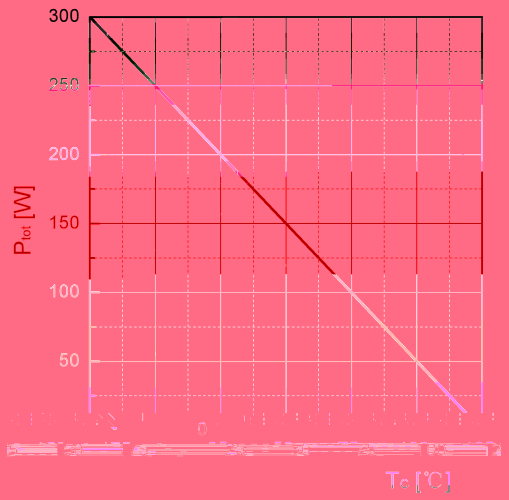


Fig 3. Power dissipation as a function of

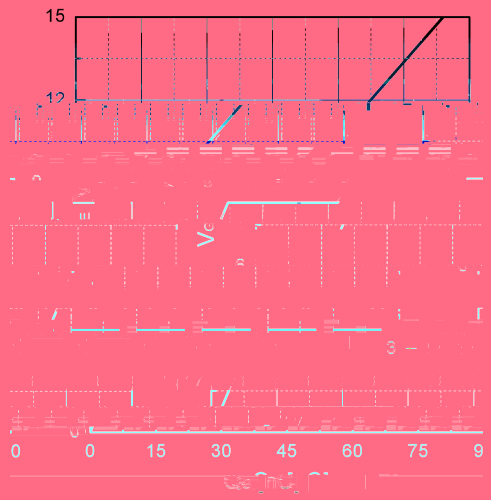


Fig 4. Typical Gate charge

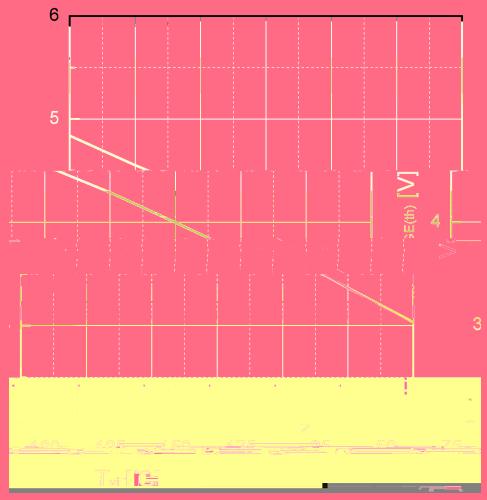


Fig 5. Typical $_{GE(th)}$ as a function of $_{vj}$ ($_{C}$=1mA)

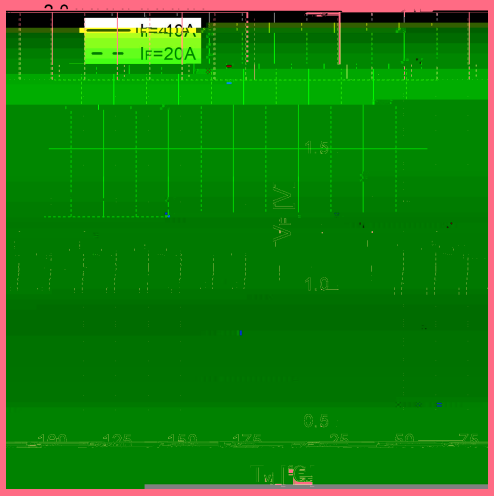


Fig 6. Typical $_{F}$ as a function of $_{vj}$

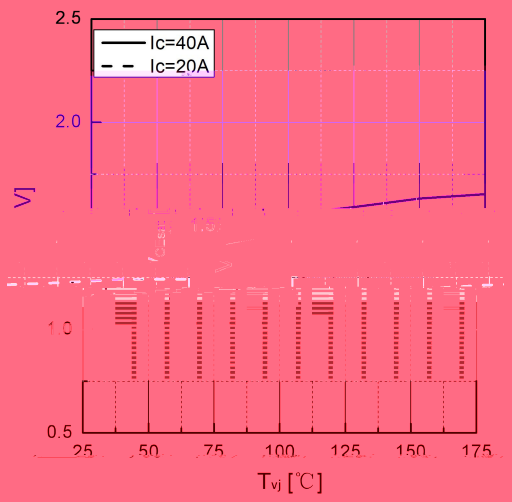


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

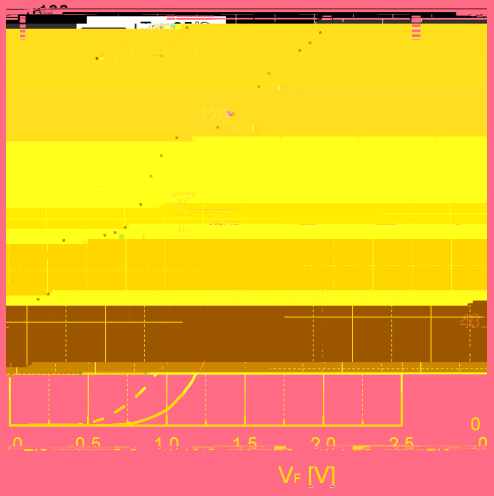


Fig 8. Typical $_{F}$ as a function of $_{F}$

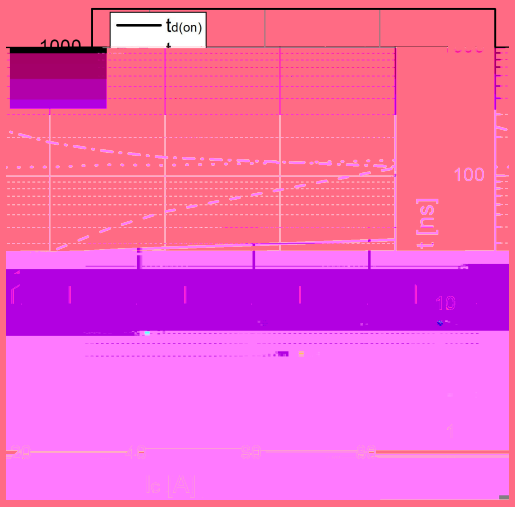


Fig 9. Typical switching time as a function of $_{C}$

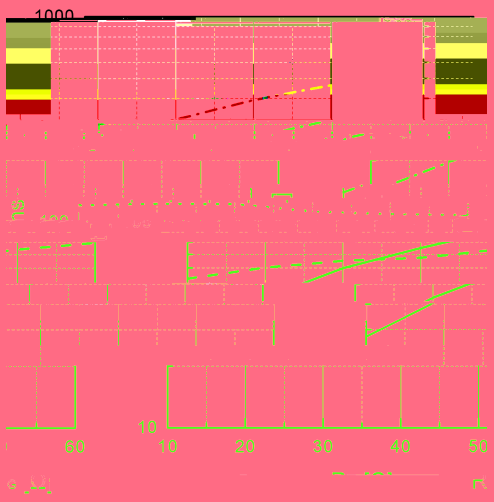


Fig 10. Typical switching times as a function of $_{G}$

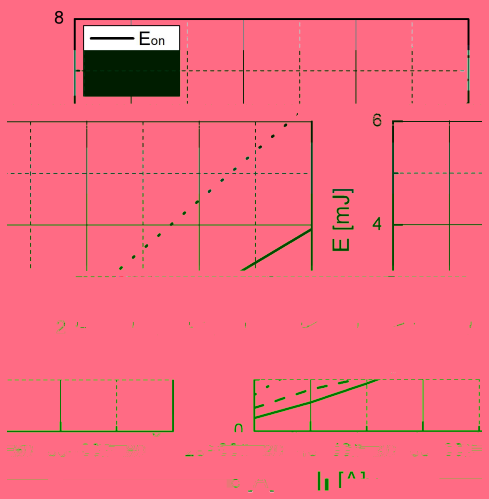


Fig 11. Typical switching energy losses as a function of $_{C}$

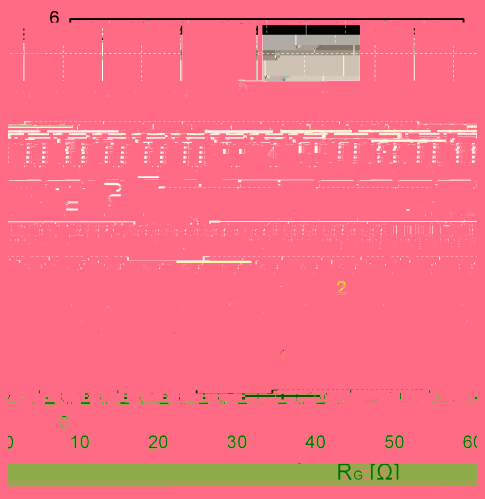


Fig 12. Typical switching energy losses as a function of $_{G}$

Dimensions						
Ref.	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

Date	Revision	Changes
2024-09-10	Rev 1.0	Release of the datasheet
2025-04-30	Rev 1.1	Add graph and character update

PLEASE NOTE -