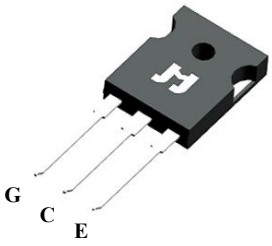
Ke performance:

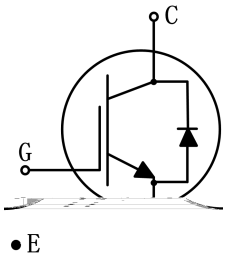
- $_{CE}$ =650V
- $_{C}$=40A@ $_{C}$=100
- $_{CE(sat)}$=1.4V

TO-247



Features:

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



Benefits:

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

Applications:

- EV chargers

Package parameters

Type	Marking	Package	Packaging Method
JJT40N65LE	T4065LE	TO-247	Tube

S mbol	Parameter	Test condition	Values			Unit
			Min.	T p.	Max.	
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	4.3	4.8	5.3	V
CE(sat)	Collector-emitter saturation voltage	GE=15 V, C=40A	-	1.4	-	V
		GE=15V, C=40A, vj=175	-	1.7	-	V

S mbol	Parameter	Test condition		Values			Unit
				Min.	T p.	Max.	
ies	Input capacitance	CE=30V GE=0V =1MHz	HTM	-	2540	-	pF
oes	Output capacitance			-	143	-	pF
res	Reverse transfer capacitance			-	17	-	pF
g	Total gate charge	CC=520V GE=15V C=40A					

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Symbol	Parameter	Test condition	Values			Unit
			Min.	Typ.	Max.	
$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=40A R_G=10Ω Inductiveveve				

Electrical characteristics of Diode ($_{vj}$=25 unless otherwise specified)

S mbol	Parameter	Test condition	Values			Unit
			Min.	T p.	Max.	
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

T pical performance characteristics

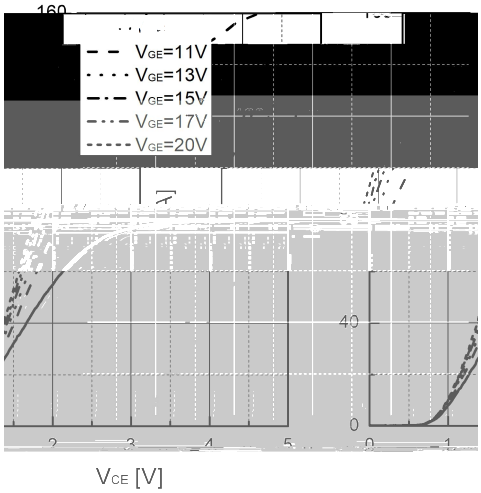


Fig 1. Typical output characteristic (vj=25)

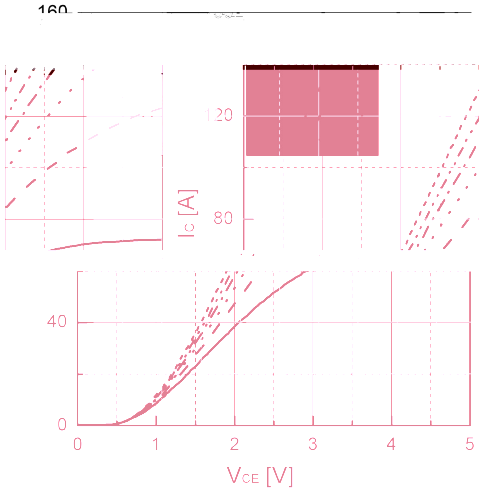


Fig 2. Typical output characteristic(vj=175)

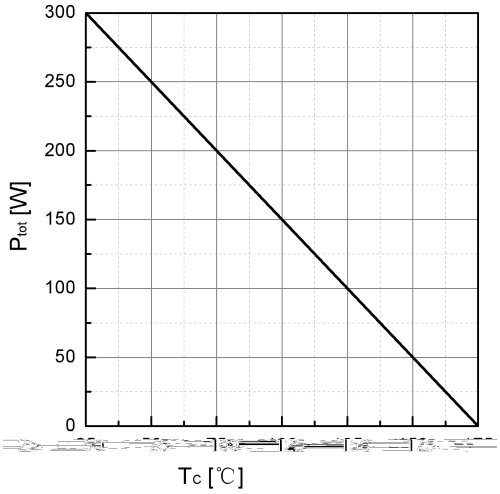


Fig 3. Power dissipation as a function of

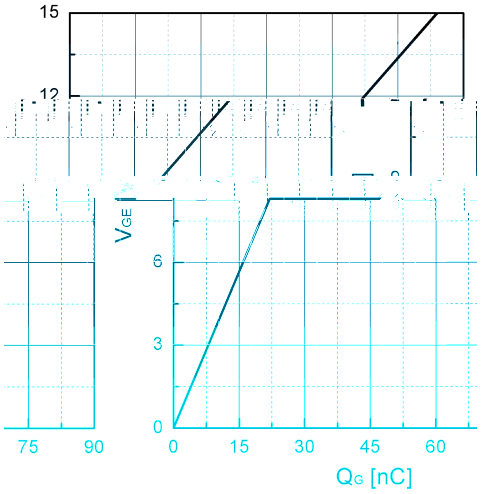


Fig 4. Typical Gate charge

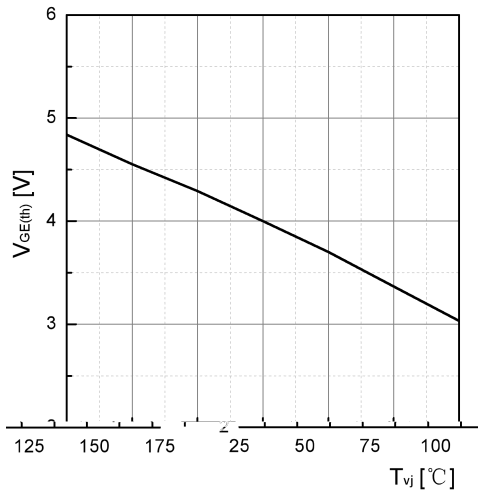


Fig 5. Typical GE(th) as a function of vj (C=1mA)

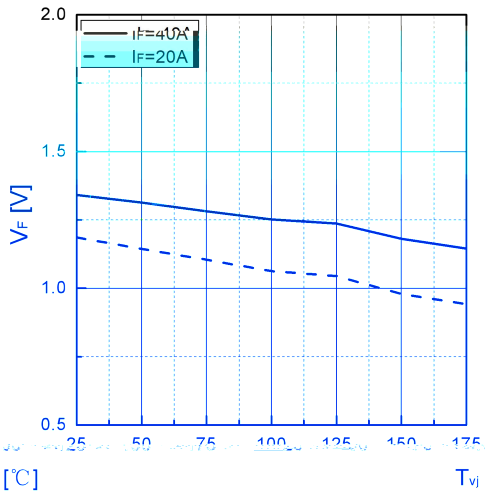


Fig 6. Typical F as a function of vj

T pical performance characteristics

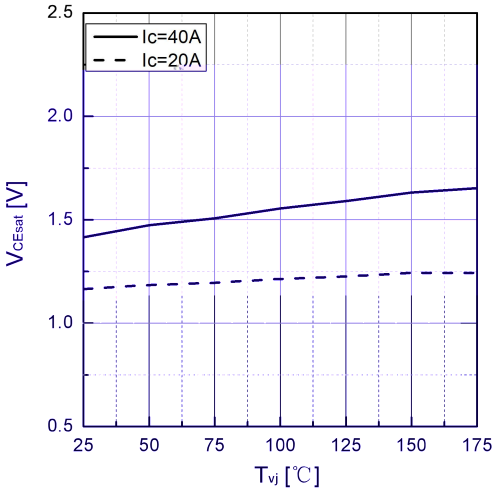


Fig 7. Typical CEsat as a function of vj

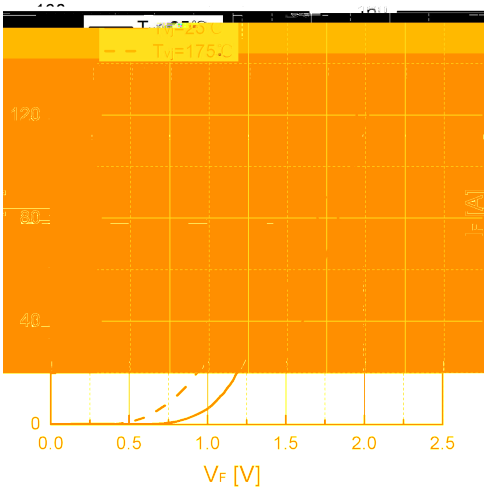


Fig 8. Typical F as a function of F

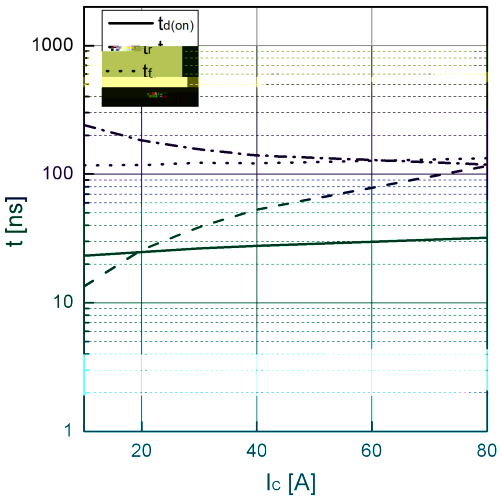


Fig 9. Typical switching time as a function of C

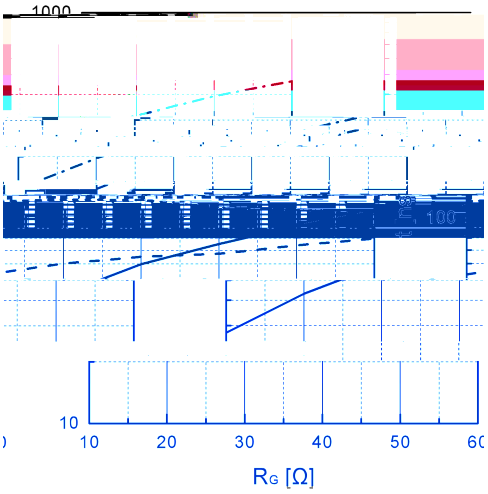


Fig 10. Typical switching times as a function of G

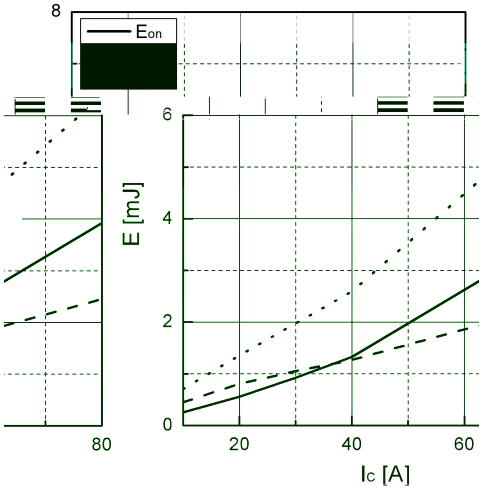


Fig 11. Typical switching energy losses as a function of C

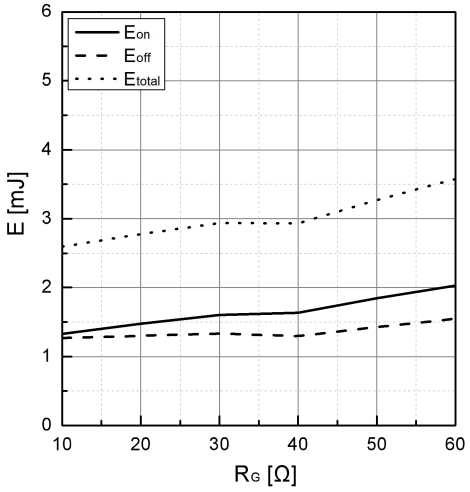
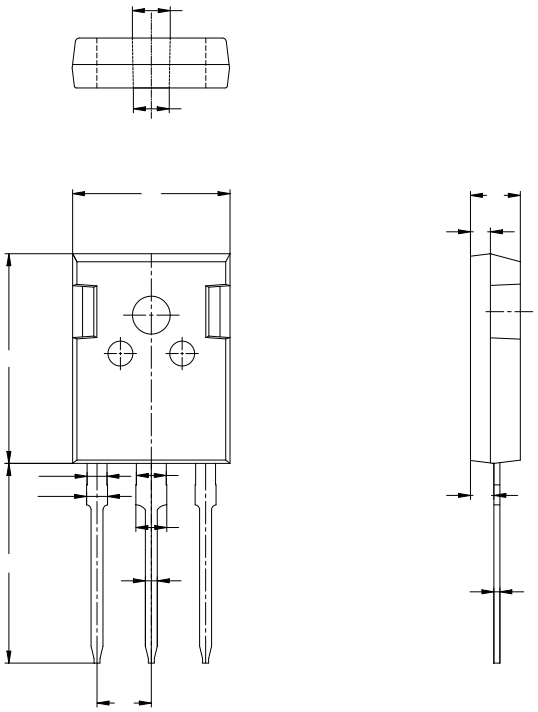


Fig 12. Typical switching energy losses as a function of G

Package dimension

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

Revision histor

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

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