JJMICROELECTRONICS

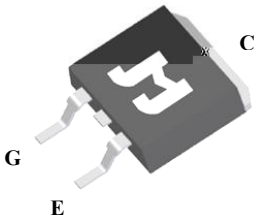
650V 40A Trench and Field Stop IGBT

JJT40N65LCN

Ke pe fo mance:

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

TO-263

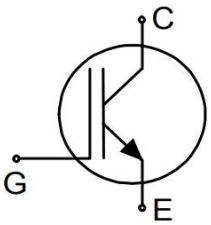


Fea e :

- T e ch a d f e d- ech g .
- Ea a a e ch g ca ab .

Benefi :

- H gh eff c e c f e e .
- H gh gged e e f a ce.
- R HS c a .



Applica ion :

- EV cha ge

Package pa ame e

T e	Ma g	Pac age	Pac ag g Me h d
JJT40N65LCN	T4065LCN	TO-263	Ta e&Ree

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Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	20	V
I_C	Collector current (T_C=25)	80	A
	Collector current (T_C=100)	40	A
I_{CM}	Pulsed collector current, limited by T_{a}	160	A
I_F	Diode continuous forward current (T_C=100)	40	A
I_{FM}	Diode maximum current, limited by T_{a}	160	A
P	Power dissipation (T_C=25)	300	W
	Power dissipation (T_C=100)	150	W
T	Operating junction temperature	-40 +175	
T_g	Storage temperature range	-55 +150	

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S a ·c cha ac e · ·c

S mbol	Pa ame e	Te condi ion	Val e			Uni
			Min.	T p.	Ma .	
BV_{CES}	C ec -e · e b ea d age	V_{GE}=0V, I_C=250 A	650	-	-	V
I_{CES}	C ec -e · e ea age c e	V_{CE}=650V, V_{GE}=0V	-	-	50	A
I_{GES}	Ga e ea age c e , f a d	V_{GE}=20V, V_{CE}=0V	-	-	100	A
	Ga e ea age c e , e e e	V_{GE}=-20V, V_{CE}=0V	-	-	-100	A
$V_{GE(h)}$	Ga e-e · e h e h d age	V_{GE}=V_{CE}, I_C=1	4.3	4.8	5.3	V
$V_{CE(a)}$	C ec -e · e a a · age	V_{GE}=15 V, I_C=40A	-	1.4	-	V
		V_{GE}=15V, I_C=40A, T =175	-	1.7	-	V

D a ·c cha ac e · ·c

S mbol	Pa ame e	Te condi ion	Val e			Uni
			Min.	T p.	Ma .	
$C_{·e}$	I ca ac· a ce	V_{CE}=30V V_{GE}=0V f=1MH	-	2540	-	F
C_{e}	O ca ac· a ce		-	143	-	F
C_{e}	Re e e a fe ca ac· a ce		-	17	-	F
Q_g	T a ga e cha ge	V_{CC}=520V V_{GE}=15V I_C=40A	-	84	-	C

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S ch g cha ac e c

S mbol	Pa ame e	Te condi ion	Val e			Uni
			Min.	T p.	Ma .	
$t_{d(\ )}$	T - de a e	V_{CC}=400V V_{GE}=0/15V I_C=40A R_G=10Ω I d c e ad	-	27	-	
t	R e e		-	53	-	
$t_{d(\ ff)}$	T - ff de a e		-	139	-	
t_f	Fa e		-	121	-	
E	T - e e g		-	1.3	-	J
$E_{\ ff}$	T - ff e e g		-	1.3	-	J
E	T a ch g e e g		-	2.6	-	J
$t_{d(\ )}$	T - de a e	V_{CC}=400V V_{GE}=0/15V I_C=40A R_G=10Ω I d c e ad T =175	-	26	-	
t	R e e		-	54	-	
$t_{d(\ ff)}$	T - ff de a e		-	165	-	
t_f	Fa e		-	227	-	
E	T - e e g		-	1.4	-	J
$E_{\ ff}$	T - ff e e g		-	1.9	-	J
E	T a ch g e e g		-	3.3	-	J

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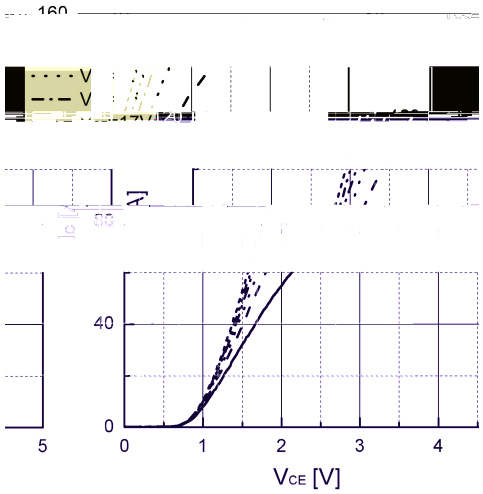
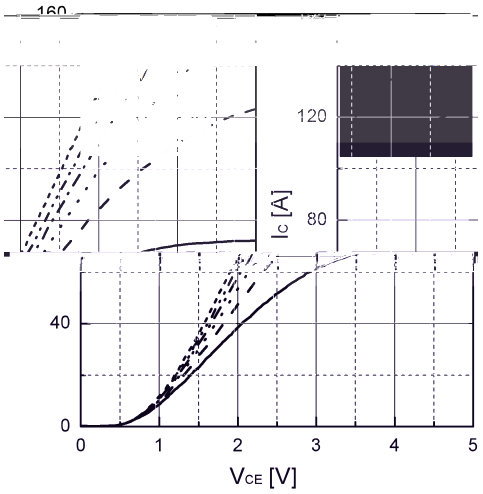
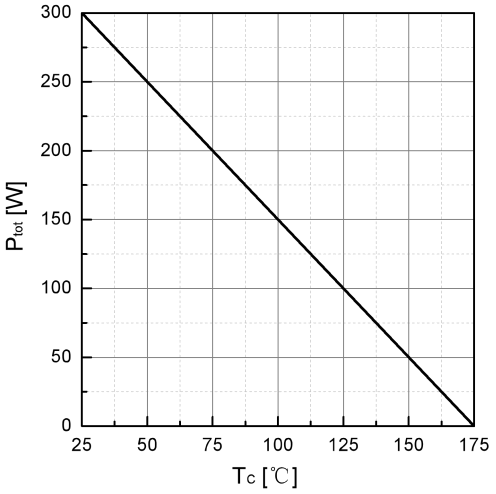
T pical pe fo mance cha ac e i ic



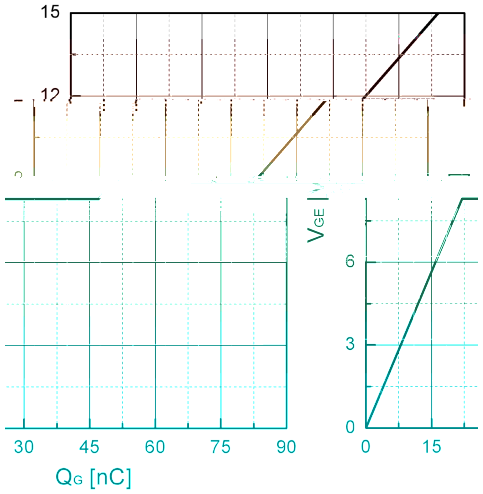
F g 1. T ca cha ac e c (*T* =25)



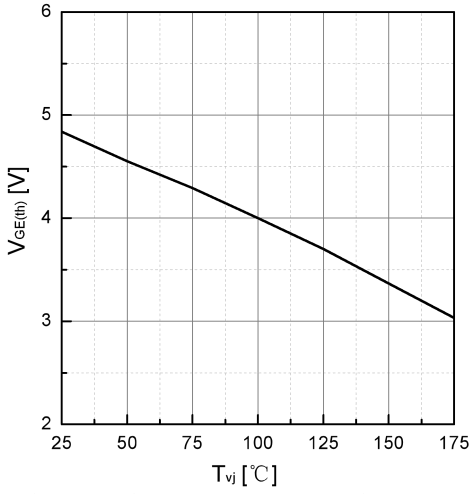
F g 2. T ca cha ac e c(*T* =175)



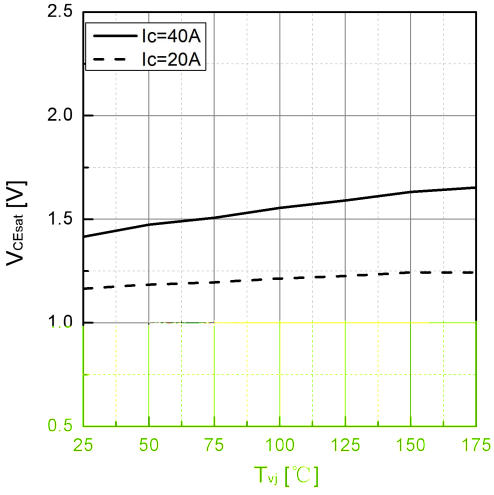
F g 3. P e d a a f c f T_C



F g 4. T ca Ga e cha ge



F g 5. T ca $V_{GE(th)}$ a a f c f *T*
(I_C=1 A)



F g 6. T ca $V_{CE\,a}$ a a f c f *T*

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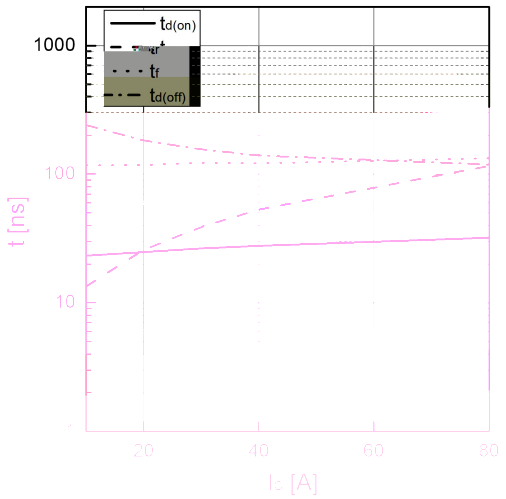
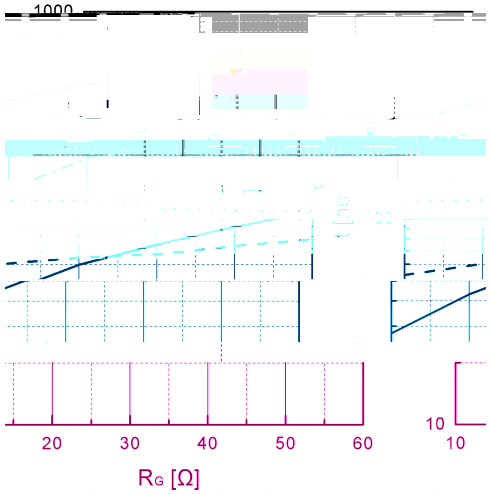
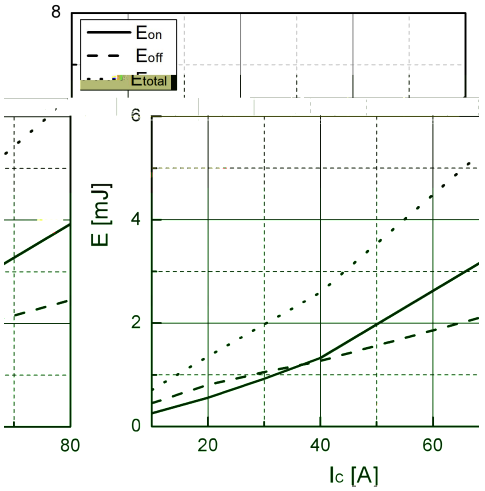
T pical pe fo mance cha ac e i ic



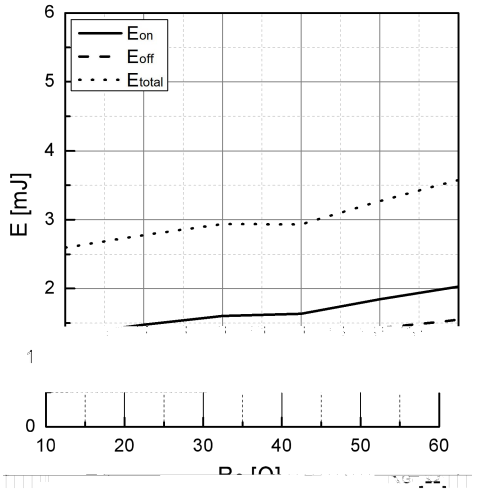
F g 7. T ca ch g e a a f c f I_C



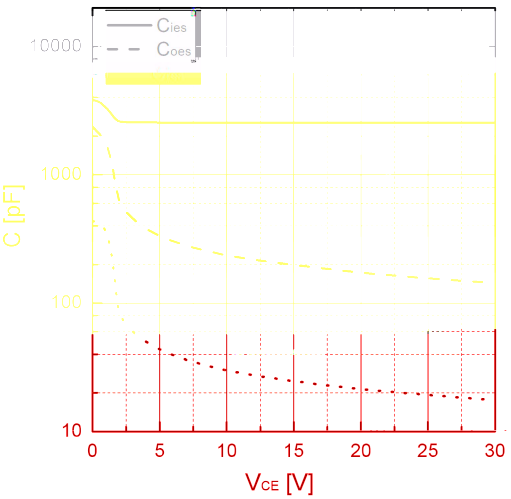
F g 8. T ca ch g e a a f c f R_G



F g 9. T ca ch g e e g e a a f c f I_C



F g 10. T ca ch g e e g e a a f c f R_G



F g 11. T ca ca ac a ce a a f c f V_{CE} (f=1Mh , V_{GE}=0V)

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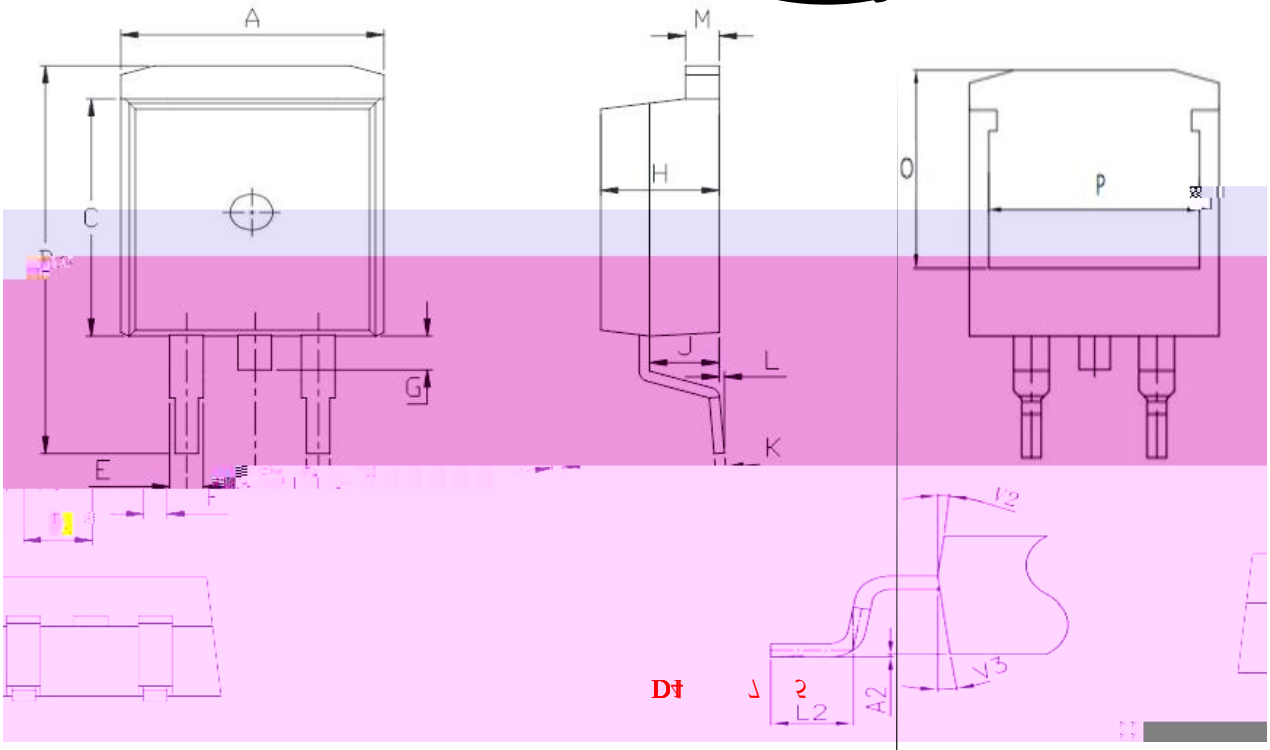

Ref.

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Da e	Re	Cha ge
2026-03-30	Re 1.0	I b26-

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