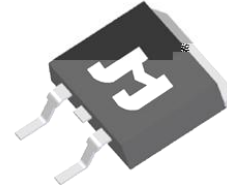


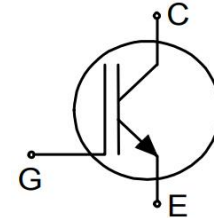
650V 40A Trench and Field Stop IGBT
JJT40N65LCN

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

TO-263


- Trench and field stop technology.
- Excellent switching capability.

- High efficiency.
- High gate efficiency.
- R_{HS} capability.



- EV charger

Part Number	Manufacturer	Package	Package Method
JJT40N65LCN	T4065LCN	TO-263	Tape & Reel



V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	20	V
I_C	Collector current ($T_C=25^\circ$)	80	A
	Collector current ($T_C=100^\circ$)	40	A
I_{CM}	Peak collector current, limited by T_a	160	A
I_F	Diode forward current ($T_C=100^\circ$)	40	A
I_{FM}	Diode average current, limited by T_a	160	A
P	Peak power ($T_C=25^\circ$)	300	W
	Peak power ($T_C=100^\circ$)	150	W
T	Operating temperature range	-40 +175	
T_g	Storage temperature range	-55 +150	

Discontinued



S a ' c cha ac e ' ' c

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

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



Switching characteristics

$t_{d()}$	Turn-on delay	$V_{CC}=400V$ $V_{GE}=0/15V$ $I_C=40A$ $R_G=10\Omega$ Idc'ead	-	27	-	
t_r	Recovery		-	53	-	
$t_{d(ff)}$	Turn-off delay		-	139	-	
t_f	Fall time		-	121	-	
E	Turn-on energy		-	1.3	-	J
E_{ff}	Turn-off energy		-	1.3	-	J
E	Turn-on switching energy		-	2.6	-	J
$t_{d()}$	Turn-on delay	$V_{CC}=400V$ $V_{GE}=0/15V$ $I_C=40A$ $R_G=10\Omega$ Idc'ead $T =175$	-	26	-	
t_r	Recovery		-	54	-	
$t_{d(ff)}$	Turn-off delay		-	165	-	
t_f	Fall time		-	227	-	
E	Turn-on energy		-	1.4	-	J
E_{ff}	Turn-off energy		-	1.9	-	J
E	Turn-on switching energy		-	3.3	-	J

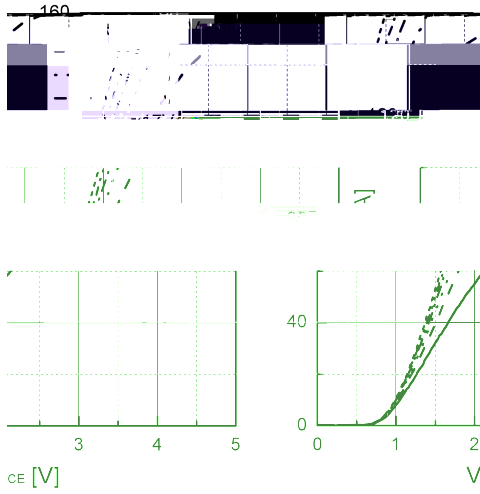


Fig 1. Thermal characteristics ($T_c = 25^\circ\text{C}$)

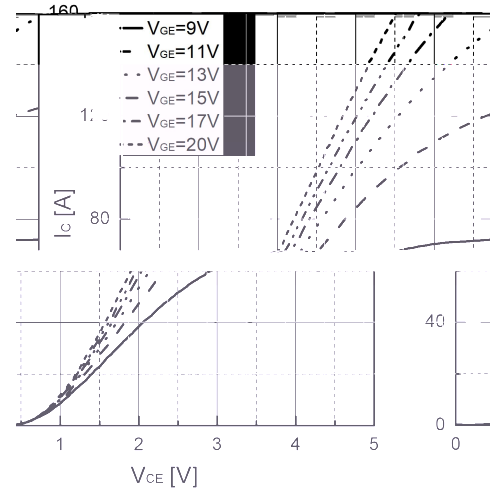


Fig 2. Thermal characteristics ($T_c = 175^\circ\text{C}$)

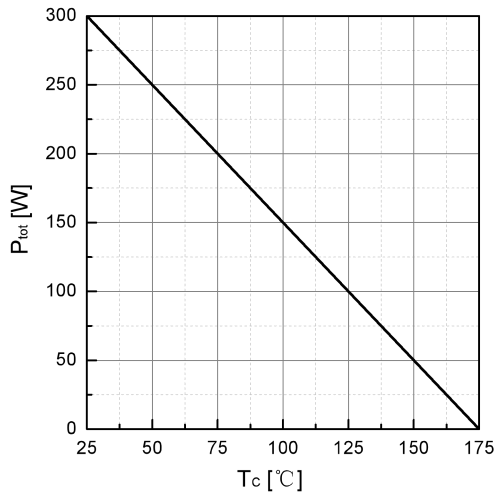


Fig 3. Power dissipation vs T_c

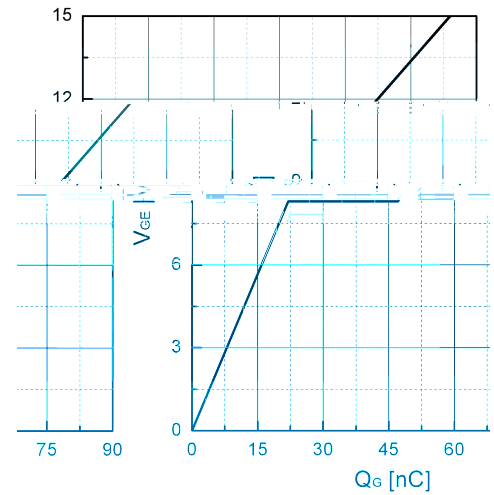


Fig 4. Thermal characteristics

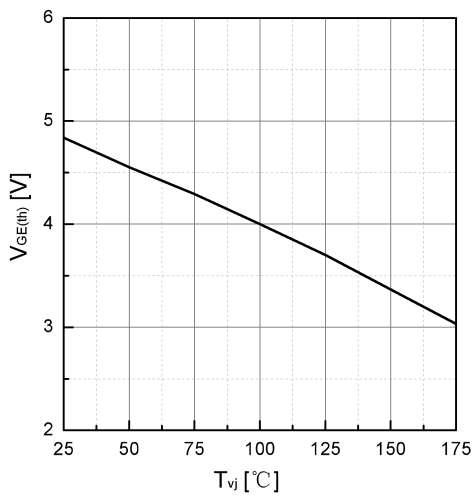


Fig 5. Thermal characteristics of $V_{GE(h)}$ vs T_{vj} ($I_c = 1\text{ A}$)

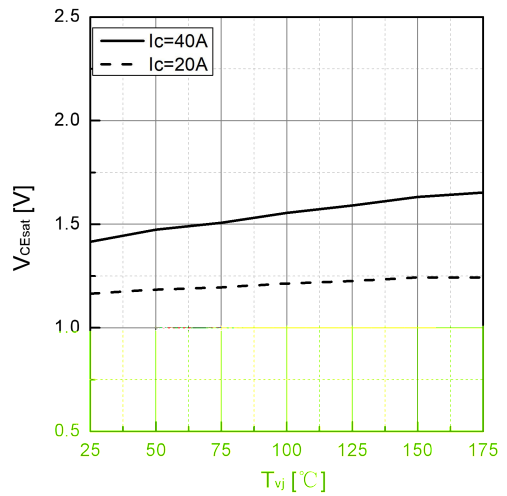


Fig 6. Thermal characteristics of V_{CEsat} vs T_{vj}

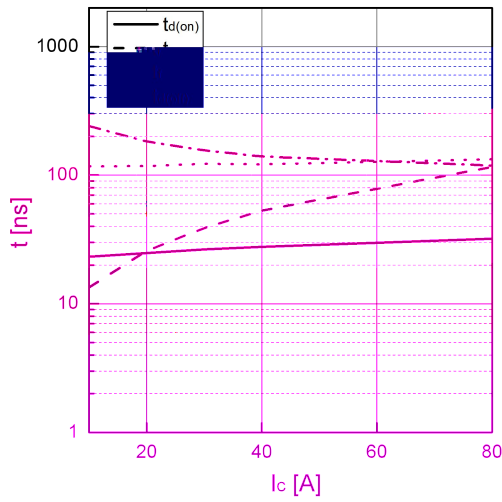


Fig 7. T_{ca} 'ch' g' e a a f c' f I_C

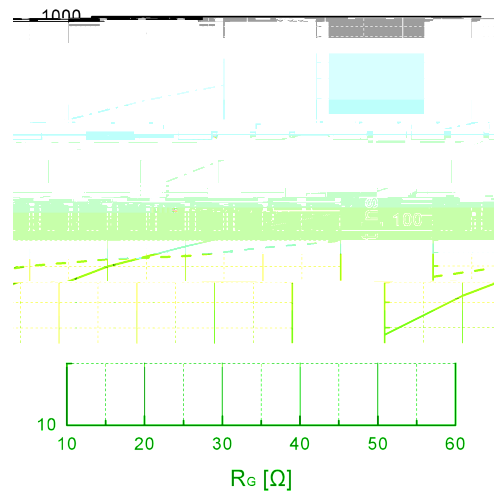


Fig 8. T_{ca} 'ch' g' e a a f c' f R_G

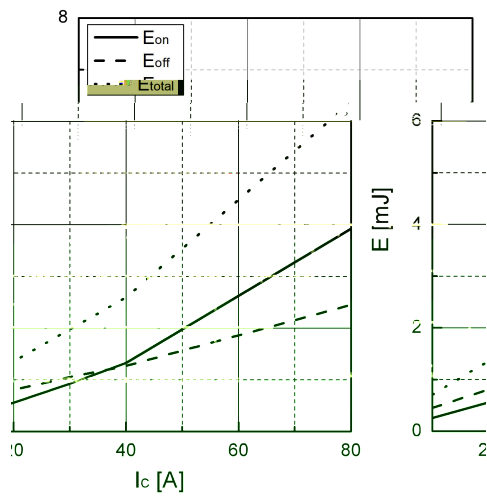


Fig 9. T_{ca} 'ch' g' e e g' e a a f c' f I_C

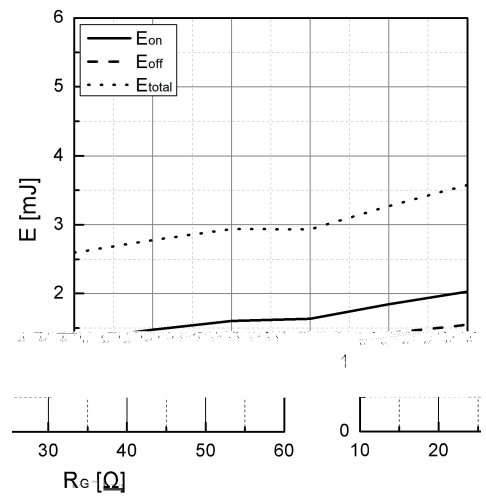


Fig 10. T_{ca} 'ch' g' e e g' e a a f c' f R_G

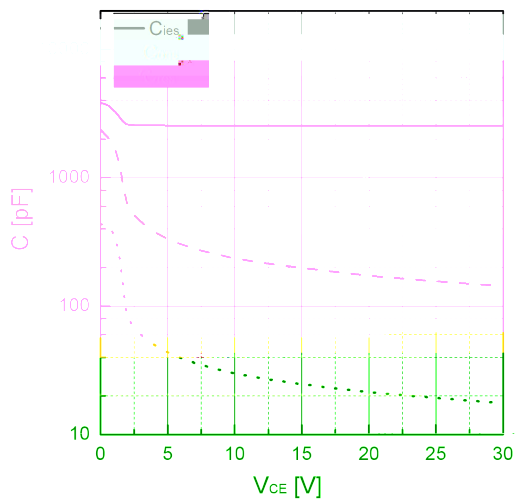
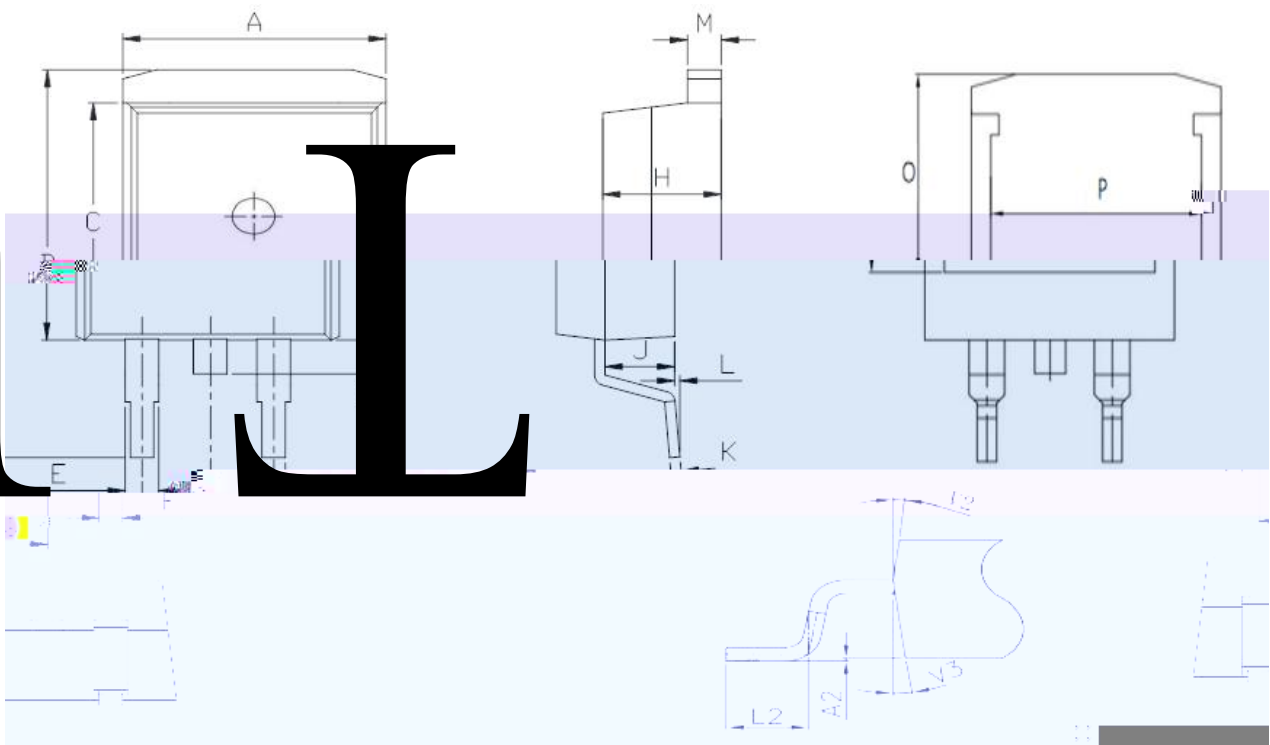


Fig 11. T_{ca} ca ac' a ce a a f c' f V_{CE}
($f=1\text{MHz}$, $V_{GE}=0\text{V}$)



11



Drawing

Ref.



Date	Revised	Change
2026-03-30	Revised 1.0	Initial