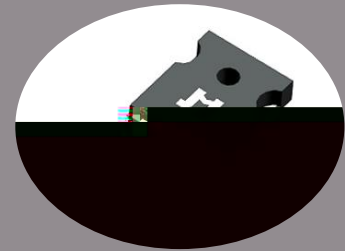
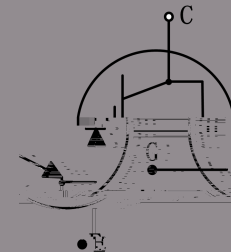


- $V_{CE} = 650V$
- $I_C = 40A @ V_{CE} = 100$
- $V_{CE(sat)} = 1.7V$

TO-247i



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



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

- PFC applications
- Uninterruptible power supplies
- Solar inverters

Type	Marking	Package	Packaging Method
JJT40N65HK	T4065HK	TO-247i	Tube



CES	Collector-emitter voltage	650	V
GES	Gate-emitter voltage	±20	V
C	Continuous collector cur		



CES	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=250\mu A$	650	-	-	V
CES	Collector-emitter leakage current	$V_{CE}=650V, V_{GE}=0V$	-	-	50	μA
	Gate leakage current, forward	$V_{GE}=20V, V_{CE}=0V$	-	-	100	nA
GES	Gate leakage current, reverse	$V_{GE}=-20V, V_{CE}=0V$	-	-	-100	nA
$V_{GE(th)}$	Gate-emitter threshold voltage	$V_{GE}=V_{CE}, I_C=1mA$	4.0	5.0	6.0	V
		$V_{GE}=15V, I_C=40A$	-	1.7	-	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$V_{GE}=15V, I_C=40A, v_{vj}=175$	-	2.3	-	



Switching characteristics

			V _{GS} = 10V			
			t _{on}	t _{off}	t _{sw}	
d(on)	Turn-on delay time	V _{GS} = 10V V _{CE} = 400V I _C = 40A Inductive load	-	32	-	ns
r	Rise time		-	59	-	ns
d(off)	Turn-off delay time		-	110	-	ns
f	Fall time		-	52	-	ns
on	Turn-on energy		-	1.2	-	mJ
off	Turn-off energy		-	0.6	-	mJ
ts	Total switching energy		-	1.8	-	mJ
d(on)	Turn-on delay time	V _{GS} = 10V V _{CE} = 400V I _C = 40A Inductive load v _j = 175	-	28	-	ns
r	Rise time		-	51	-	ns
d(off)	Turn-off delay time		-	131	-	ns
f	Fall time		-	78	-	ns
on	Turn-on energy		-	1.6	-	mJ
off	Turn-off energy		-	1.0	-	mJ
ts	Total switching energy		-	2.6	-	mJ



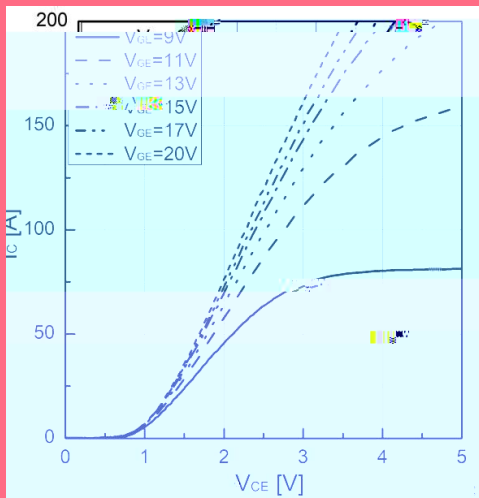


Fig 1. Typical output characteristic ($v_j=25$)

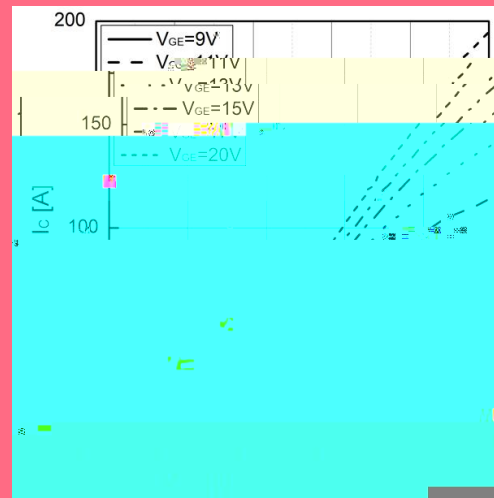


Fig 2. Typical output characteristic ($v_j=175$)

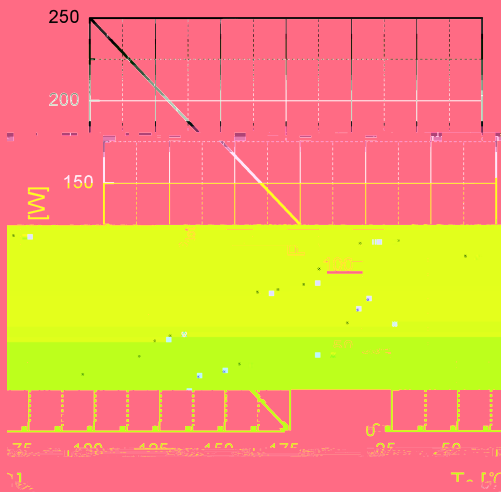


Fig 3. Power dissipation as a function of

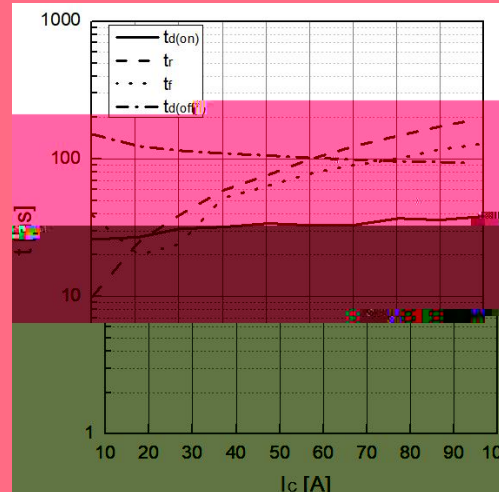


Fig 4. Typical switching time as a function of I_c

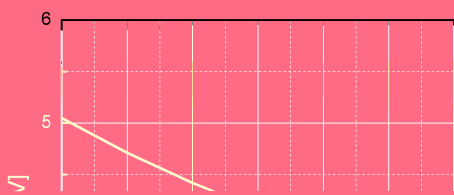


Fig 5. Typical $V_{GE(th)}$ as a function of v_j ($I_c=1mA$)

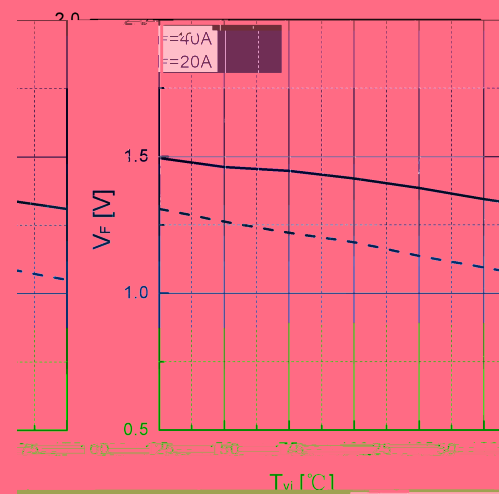


Fig 6. Typical V_F as a function of v_j

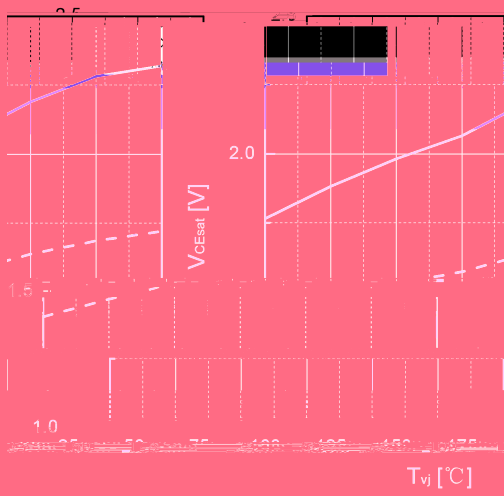


Fig 7. Typical V_{GEsat} as a function of T_{vj}

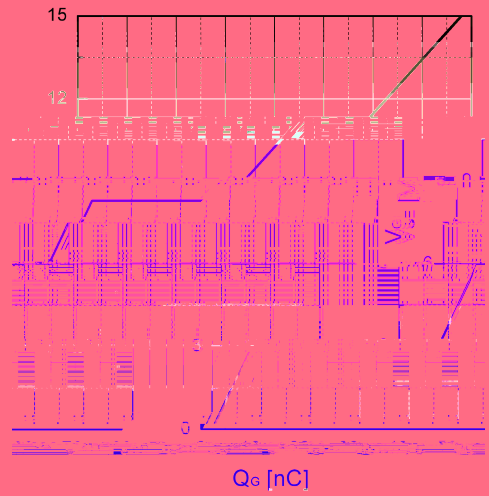


Fig 8. Typical Gate charge

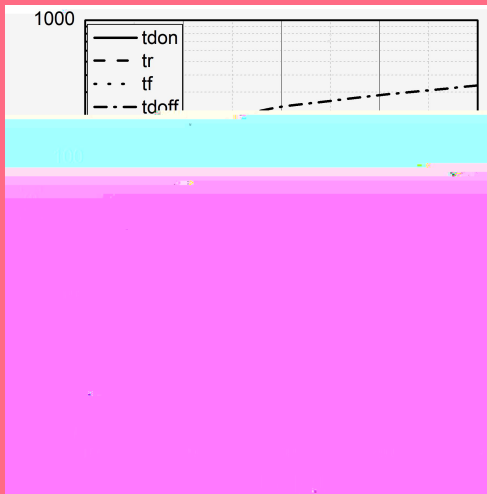


Fig 9. Typical switching times as a function of I_G

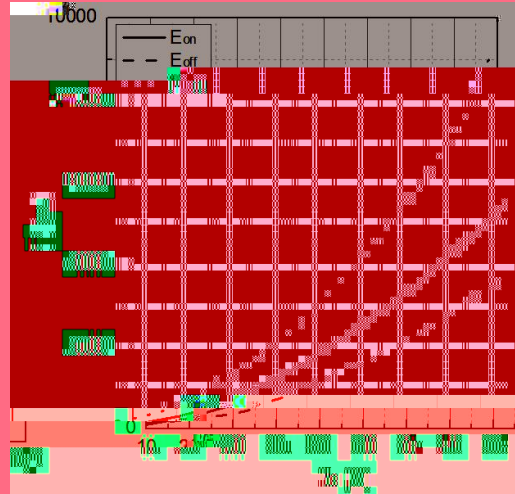


Fig 10. Typical switching energy losses as a function of I_G

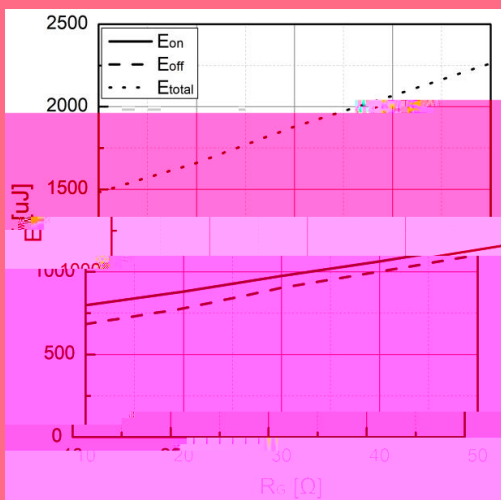


Fig 11. Typical switching energy losses as a function of $R_{\theta j-c}$

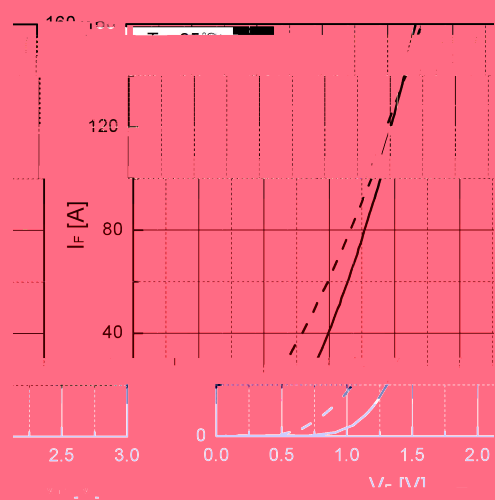


Fig 12. Typical I_F as a function of V_F

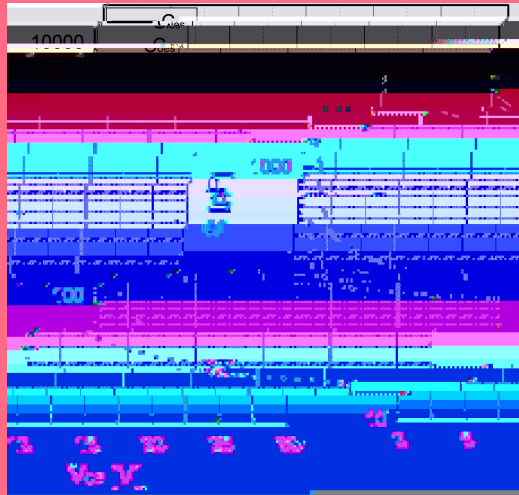


Fig 13. Typical capacitance as a function of C_{CE}
($f=1\text{Mhz}$, $V_{GE}=0\text{V}$)

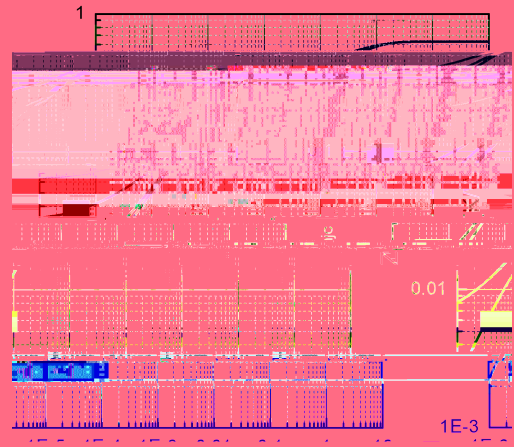


Fig 14. Transient thermal impedance of IGBT



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.			



Date	Revision	Changes
2024-10-22	Rev 1.0	Release of the datasheet
2025-01-18	Rev 1.1	Modify Rth

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