

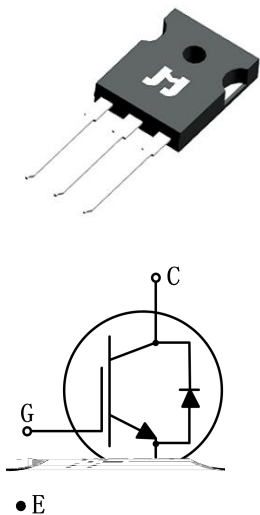
- $V_{CE}=650V$
- $I_C=60A@T_C=100$
- $V_{CE(sat)}=1.9V$

TO-247i

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

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

- PFC applications
- Welding machines



Type	Marking	Package	Packaging Method
JJT60N65UK	T6065UK	TO-247i()	Tube



V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	± 20	V
I_C	Continuous collector current ($T_C=25^\circ\text{C}$)	120	A
	Continuous collector current ($T_C=100^\circ\text{C}$)	60	A
I_{CM}	Pulsed collector current, t_p limited by T_{vjmax}	240	A
I_F	Diode continuous forward current ($T_C=100^\circ\text{C}$)	60	A
I_{FM}	Diode maximum current, t_p limited by T_{vjmax}	240	A
P_{tot}	Power dissipation ($T_C=25^\circ\text{C}$)	230	W
	Power dissipation ($T_C=100^\circ\text{C}$)	115	W
T_{vj}	Operating junction temperature range	-40 to +175	
T_{stg}	Storage temperature range	-55 to +150	

$R_{th(jc)}$ — Thermal resistance, junction to case for IGBT



BV_{CES}	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=250\mu A$	650	-	-	V
I_{CES}	Collector-emitter leakage current	$V_{CE}=650V, V_{GE}=0V$	-	-	50	μA
I_{GES}	Gate leakage current, forward	$V_{GE}=20V, V_{CE}=0V$	-	-	100	nA
	Gate leakage current, reverse	$V_{GE}=-20V, V_{CE}=0V$	-	-	-100	nA
$V_{GE(th)}$	Gate-emitter threshold voltage	V				



Switching characteristics

$t_{d(on)}$	Turn-on delay time	$V_{CC}=400V$ $V_{GE}=0/15V$ $I_C=60A$ $R_G=10\Omega$ Inductive load	-	44	-	ns
t_r	Rise time		-	100	-	ns
$t_{d(off)}$	Turn-off delay time		-	166	-	ns
t_f	Fall time		-	75	-	ns
E_{on}	Turn-on energy		-	2.3	-	mJ
E_{off}	Turn-off energy		-	1.3	-	mJ
E_{ts}	Total switching energy		-	3.6	-	mJ
$t_{d(on)}$	Turn-on delay time	$V_{CC}=400V$ $V_{GE}=0/15V$ $I_C=60A$ $R_G=10\Omega$ Inductive load $T_{vj}=175$	-	45	-	ns
t_r	Rise time		-	105	-	ns
$t_{d(off)}$	Turn-off delay time		-	180	-	ns
t_f	Fall time		-	76	-	ns
E_{on}	Turn-on energy		-	3.6	-	mJ
E_{off}	Turn-off energy		-	1.6	-	mJ
E_{ts}	Total switching energy		-	5.2	-	mJ



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

V_F	Diode forward voltage	$I_F=60A$	-	2.5	-	V
		$I_F=60A, T_{vj}=175$	-	2.0	-	V
t_{rr}	Diode reverse recovery time	$V_R=400V$ $I_F=60A$ $di_F/dt=-450A/\mu s$	-	78	-	ns
I_{rrm}	Diode peak reverse recovery current		-	15	-	A
Q_{rr}	Diode reverse recovery charge		-	511	-	nC
t_{rr}	Diode reverse recovery time	$V_R=400V$ $I_F=60A$ $di_F/dt=-450A/\mu s$ $T_{vj}=175$	-	126	-	ns
I_{rrm}	Diode peak reverse recovery current		-	26	-	A
Q_{rr}	Diode reverse recovery charge		-	2163	-	nC

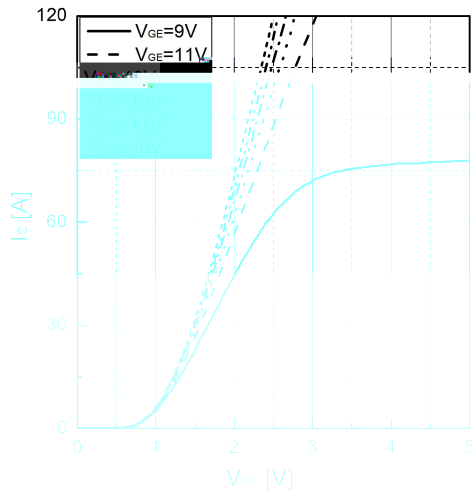


Fig 1. Typical output characteristic ($T_{vj}=25^{\circ}\text{C}$)

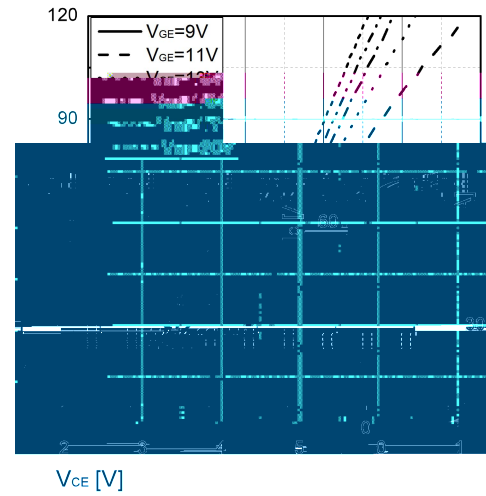


Fig 2. Typical output characteristic ($T_{vj}=175^{\circ}\text{C}$)

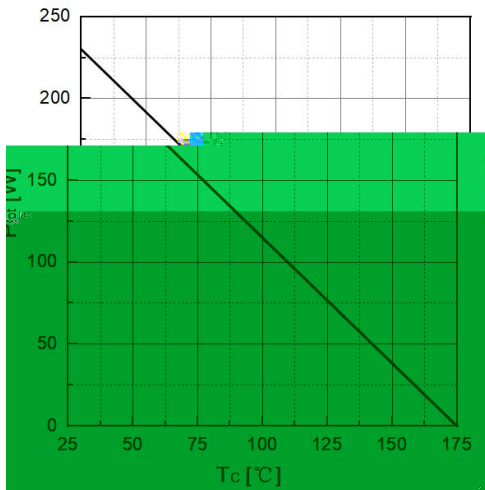


Fig 3. Power dissipation as a function of T_c

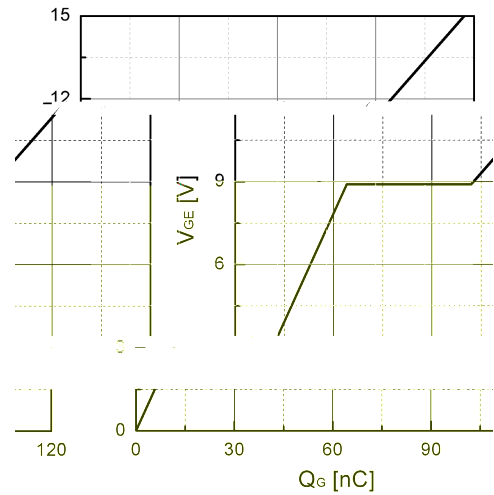


Fig 4. Typical Gate charge

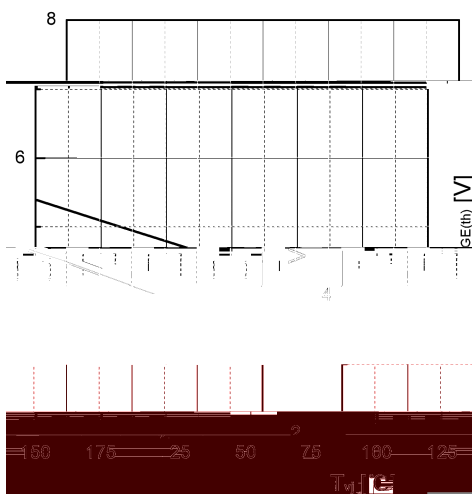


Fig 5. Typical $V_{GE(th)}$ as a function of T_{vj}
($I_c=1\text{mA}$)

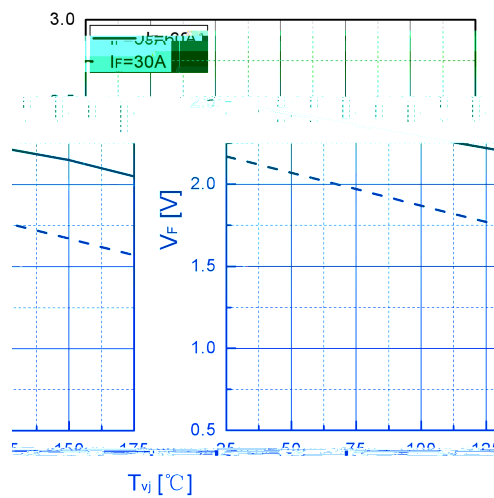


Fig 6. Typical V_F as a function of T_{vj}

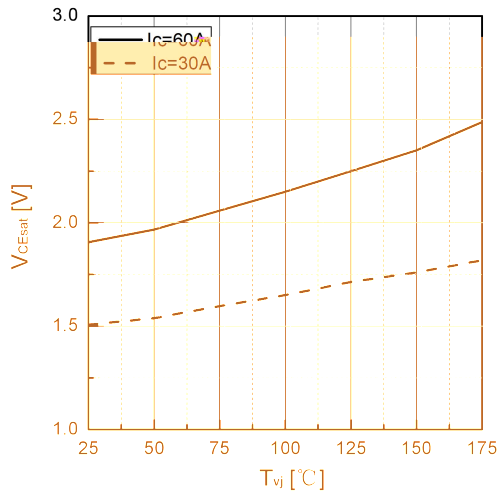


Fig 7. Typical V_{CEsat} as a function of T_{vj}

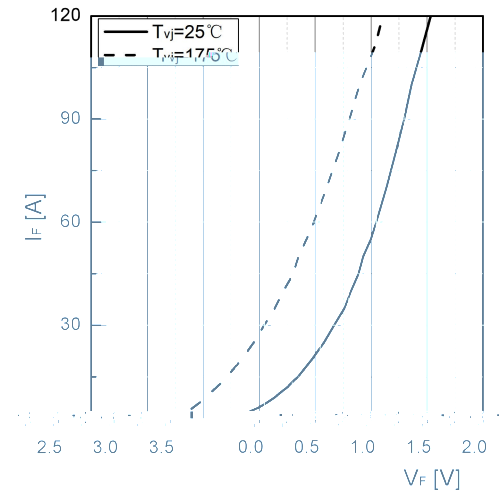


Fig 8. Typical I_F as a function of V_F

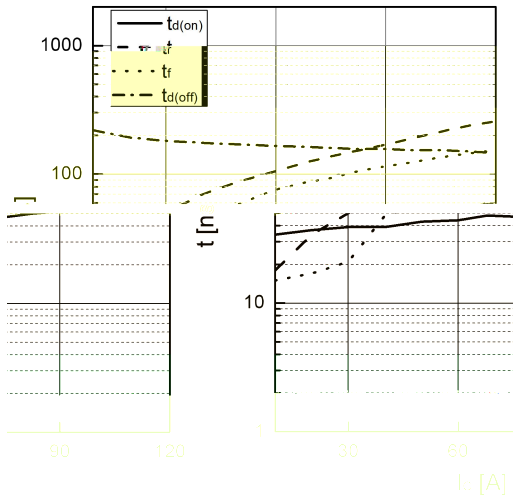


Fig 9. Typical switching time as a function of I_C

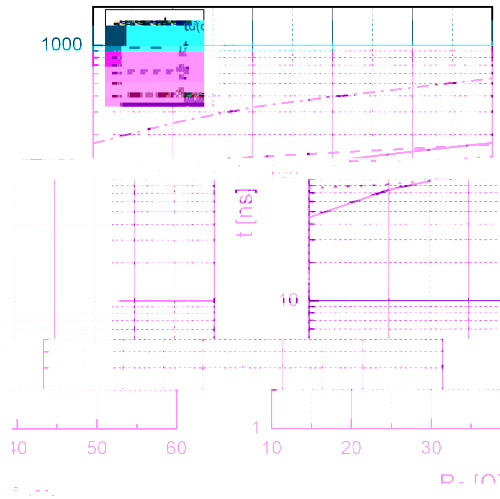


Fig 10. Typical switching times as a function of R_G

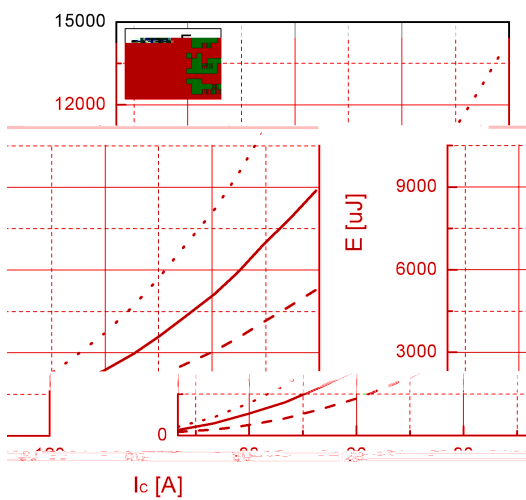


Fig 11. Typical switching energy losses as a function of I_C

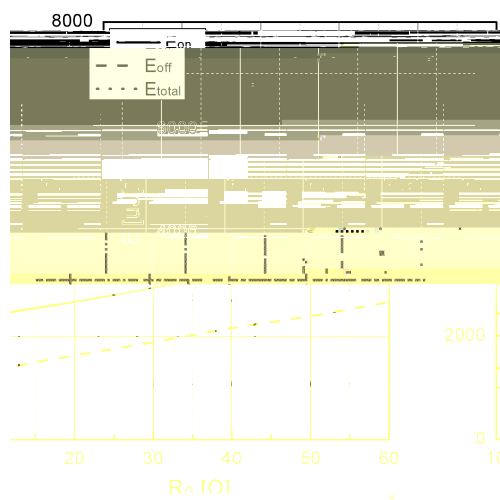


Fig 12. Typical switching energy losses as a function of R_G

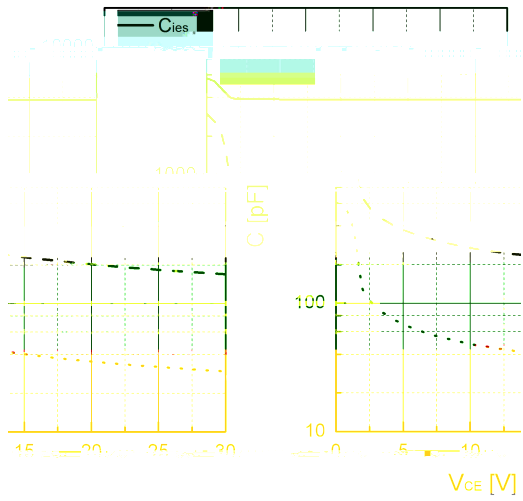


Fig 13. Typical capacitance as a function of V_{CE}
($f=1\text{MHz}$, $V_{GE}=0\text{V}$)

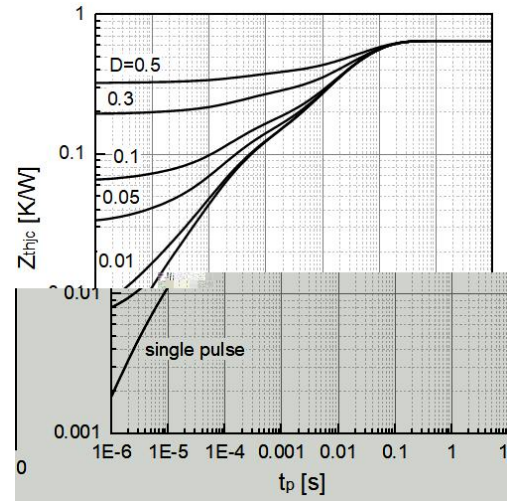


Fig 14. Transient thermal impedance of IGBT



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.95	16.00	16.05	0.627	0.62	



Date	Revision	Changes
2026-04-20	Rev 1.0	Preliminary Version
2026-06-25	Rev 1.1	Add thermal

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