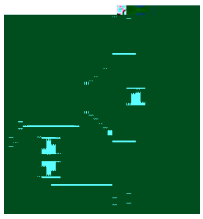
- V_{CE}=650V
- I_C=6A@ T_C=100
- $V_{CE(sat)}$=1.7 V

TO-252



- High ruggedness performance
- Very tight parameter distribution
- Positive $V_{CE\ (sat)}$ temperature coefficient
- High efficiency for motor control
- Excellent current sharing in parallel operation
- RoHS compliant
- HBM ≥ ± 2000V
- CDM ≥ ± 500V



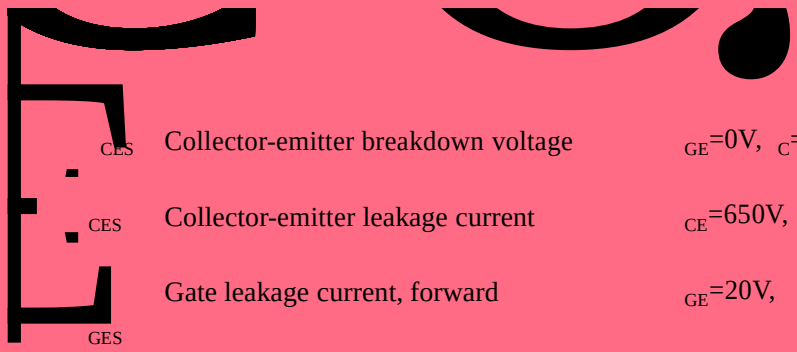
- Home appliances
- Motor drives
- Fan, Pumps, Vacuum cleaner

Type	Marking	Package	Packaging method
JJT6N65STD	T0665STD	TO-252	Tape and reel

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V_{CES}	Collector-emitter voltage	650	V
V_{GES}	Gate-emitter voltage	±20	V
I_C	Continuous collector current (T_C=25)	12	A
	Continuous collector current (T_C=100)	6	A
I_{CM}	Pulsed collector current, t_p limited by T_{vjmax}	24	A
I_F	Diode continuous forward current (T_C=100)	6	A
I_{FM}	Diode maximum current, t_p limited by T_{vjmax}	24	A
t_{sc}	Short circuit withstand time	8	µs
P_{tot}	Power dissipation (T_C=25)	60	W
	Power dissipation (T_C=100)	30	W
T_{vj}	Operating junction temperature range	-40 to +175	
T_{stg}	Storage temperature range	-55 to +150	

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$V_{(BR)CES}$	Collector-emitter breakdown voltage	V_{GE}=0V, I_C=250μA	650	-	-	V
I_{CES}	Collector-emitter leakage current	V_{CE}=650V, V_{GE}=0V	-	-	10	μA
I_{GES}	Gate leakage current, forward	V_{GE}=20V, V_{CE}=0V	-	-	100	μA
	Gate leakage current, reverse	V_{GE}=-20V, V_{CE}=0V	-	-	-100	μA
$V_{GE(th)}$	Gate-emitter threshold voltage	V_{GE}=V_{CE}, I_C=1mA	5.3	6.3		

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Switching characteristics

$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=6A R_G=10 Inductive load	-	9	-	ns
t_r	Rise time		-	18	-	ns
$t_{d(off)}$	Turn-off delay time		-	24	-	ns
t_f	Fall time		-	91	-	ns
E_{on}	Turn-on energy		-	0.18	-	mJ
E_{off}	Turn-off energy		-	0.09	-	mJ
E_{ts}	Total switching energy		-	0.27	-	mJ
$t_{d(on)}$	Turn-on delay time	V_{CC}=400V V_{GE}=0/15V I_C=6A R_G=10 Inductive Load T_{vj}=175	-	8	-	ns
t_r	Rise time		-	20	-	ns
$t_{d(off)}$	Turn-off delay time		-	33	-	ns
t_f	Fall time		-	118	-	ns
E_{on}	Turn-on energy		-	0.23	-	mJ
E_{off}	Turn-off energy		-	0.15	-	mJ
E_{ts}	Total switching energy		-	0.38	-	mJ

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		$_F$=6A	-	1.4	-	V
$_F$	Diode forward voltage	$_F$=6A, $_{vj}$=175	-	1.2	-	V
$_{rr}$	Diode reverse recovery time	$_R$=400V	-	55	-	ns
$_{rrm}$	Diode peak reverse recovery current	$_F$=6A d $_F$/d =-500A/μs	-	10	-	A

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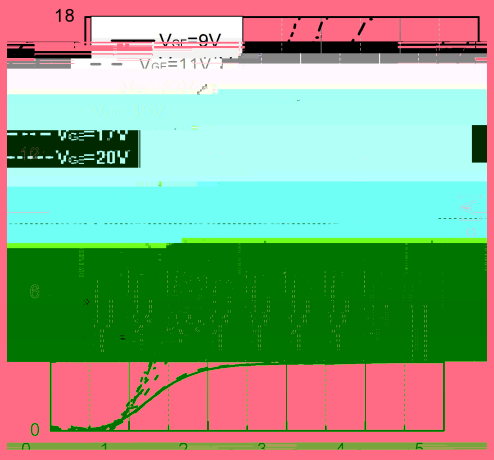


Fig 1. Typical output characteristic (vj=25)

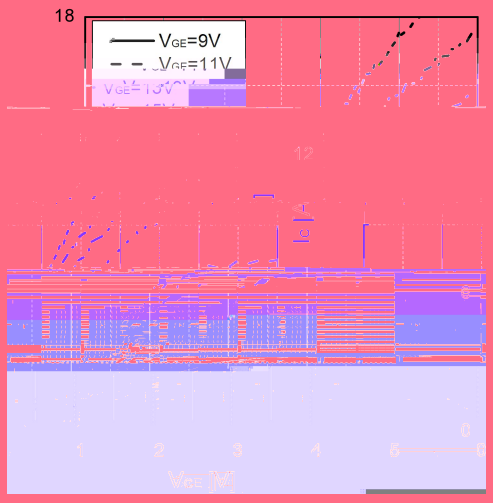


Fig 2. Typical output characteristic(vj=175)

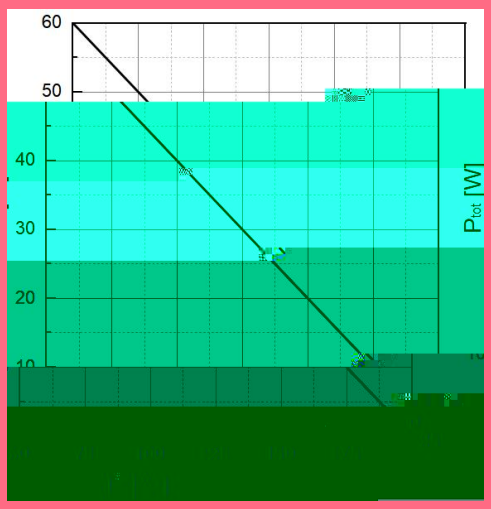


Fig 3.Power dissipation as a function of

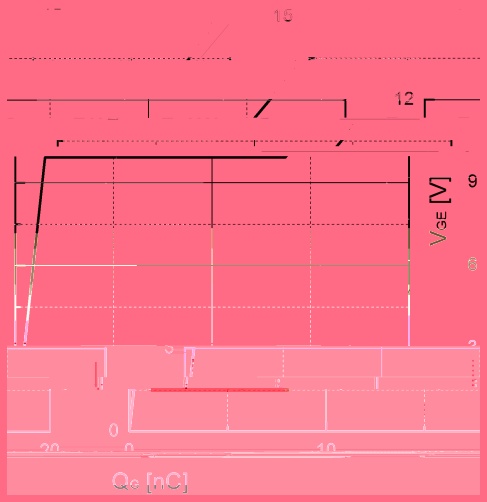


Fig 4. Typical Gate charge

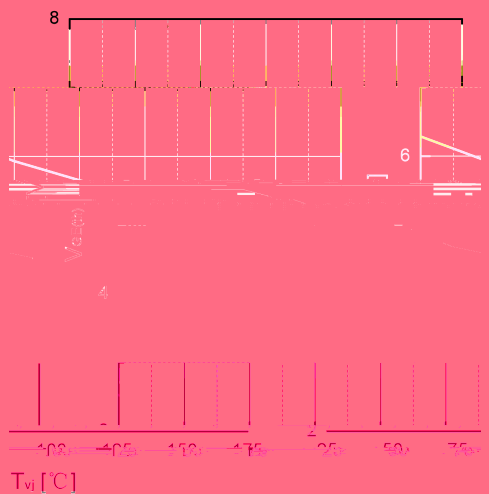


Fig 5. Typical GE(th) as a function of vj (C=1mA)

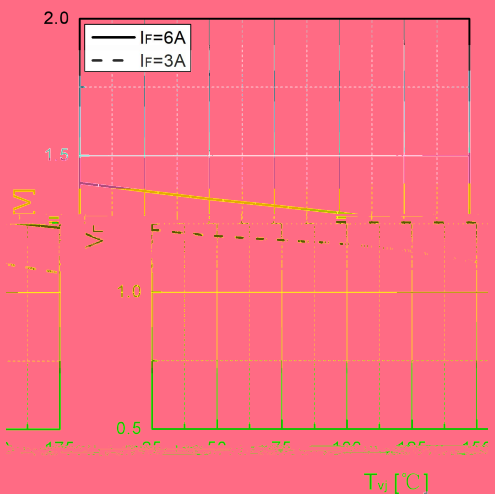


Fig 6. Typical F as a function of vj

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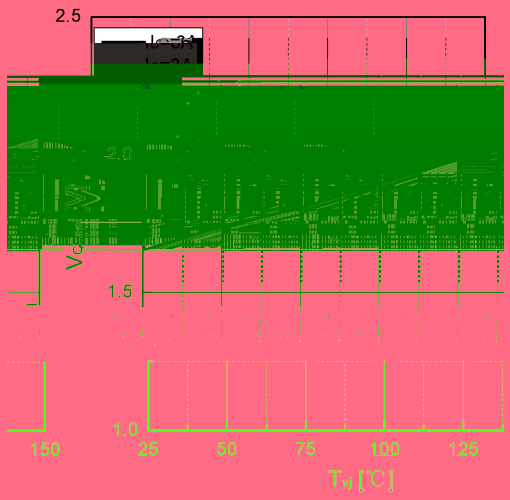


Fig 7. Typical $_{CEsat}$ as a function of $_{vj}$

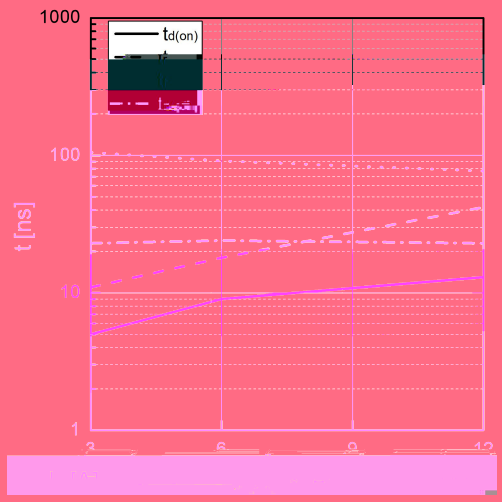


Fig 8. Typical switching time as a function of $_{C}$

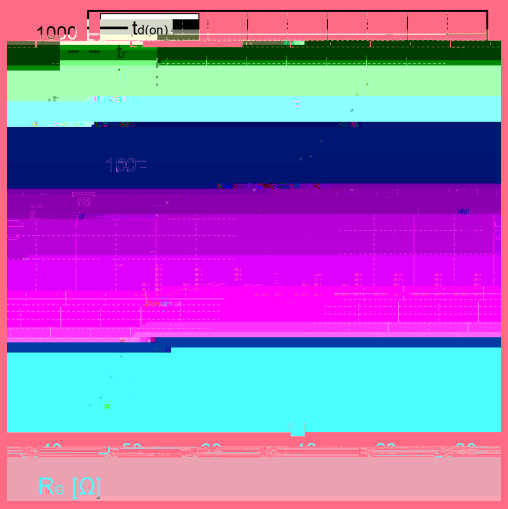


Fig 9. Typical switching time as a function of $_{G}$

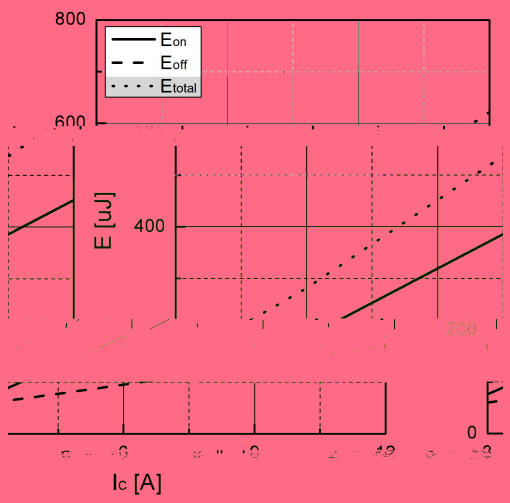


Fig 10. Typical switching energy losses as a function of $_{C}$

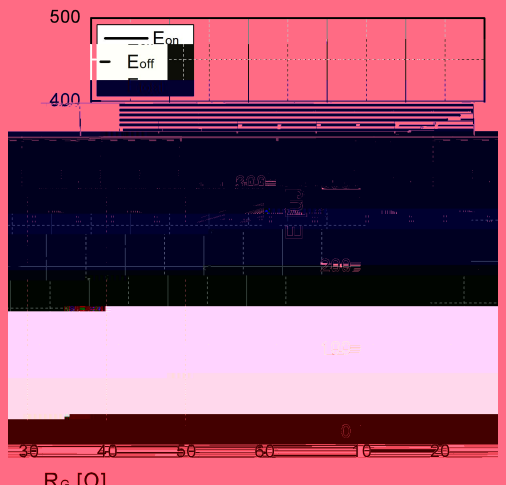


Fig 11. Typical switching energy losses as a function of $_{G}$

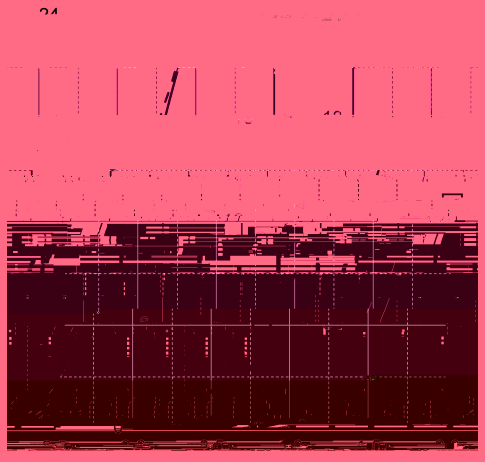


Fig 12. Typical $_{F}$ as a function of $_{F}$

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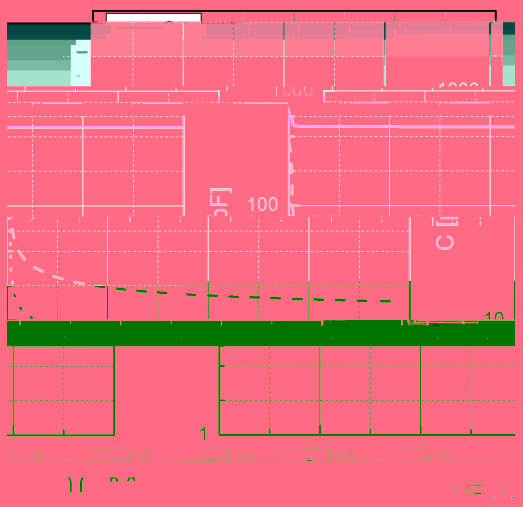


Fig 13. Typical capacitance as a function of $_{CE}$ (f=1Mhz, $_{GE}$=0V)

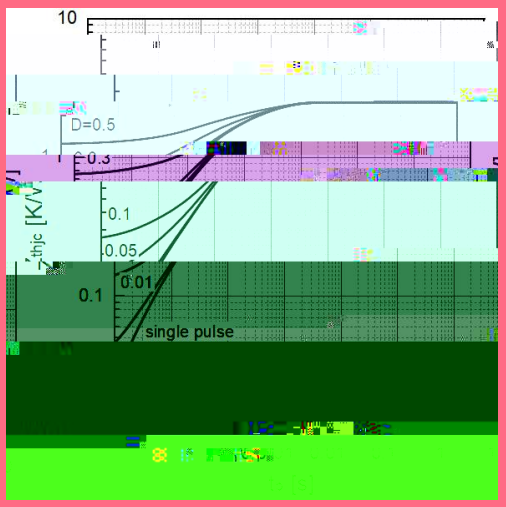
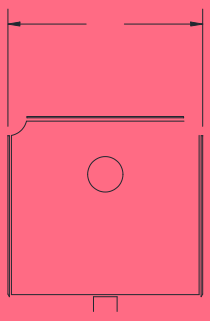


Fig 14. Transient thermal impedance of IGBT

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Date	Revision	Changes
2024-09-06	Rev 1.0	Release of the datasheet
2024-10-22	Rev 1.1	Character Update
2025-02-06	Rev 1.2	Update Rth
2026-06-24	Rev 1.3	Update thermal

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