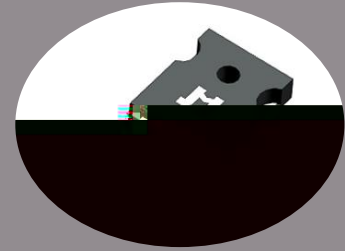
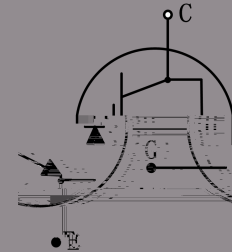


- $V_{CE} = 1200V$
- $I_C = 15A @ V_{CE} = 100$
- $V_{CE(sat)} = 1.7V$

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- Trench and field-stop technology
- Low collector to emitter saturation voltage
- Easy parallel switching capability
- Short circuit withstands time 10 $\mu$ s
- High ruggedness performance
- RoHS compliant



- Inverter
- Motor driver

Type	Marking	Package	Packaging Method
JJT15N120UE	T15120UE	TO-247	Tube



CES

Collector-emitter voltage

1200

V

(  $v_j=25$  unless otherwise specified)

### Static characteristics

CES	Collector-emitter breakdown voltage	$V_{GE}=0V, I_C=250\mu A$	1200	-	-	V
CES	Collector-emitter leakage current	$V_{CE}=1200V, V_{GE}=0V$	-	-	250	$\mu A$
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
GE(th)	Gate-emitter threshold voltage	$V_{GE}=V_{CE}, I_C=1mA$	5.7	6.2	6.5	V
CE(sat)	Collector-emitter saturation voltage	$V_{GE}=15V, I_C=15A$	-	1.7	-	V
		$V_{GE}=15V, I_C=15A, v_j=175$	-	2.2	-	V

### Dynamic characteristics

ies	Input capacitance	$V_{CE}=30V$ $V_{GE}=0V$ $f=1MHz$	-	1250	-	pF
oes	Output capacitance		-	58	-	pF
res	Reverse transfer capacitance		-	13	-	pF
g	Total gate charge	$V_{CC}=960V$ $V_{GE}=15V$ $I_C=15A$	-	74	-	nC



## Switching characteristics

d(on)	Turn-on delay time	CC=600V GE=0/15V C=15A G=10 Inductive load	-	22	-	ns
r	Rise time		-	34	-	ns
d(off)	Turn-off delay time		-	140	-	ns
f	Fall time		-	90	-	ns
on	Turn-on energy		-	0.9	-	mJ
off	Turn-off energy		-	0.7	-	mJ
ts	Total switching energy		-	1.6	-	mJ
d(on)	Turn-on delay time	CC=600V GE=0/15V C=15A G=10 Inductive load v <sub>j</sub> =175	-	22	-	ns
r	Rise time		-	38	-	ns
d(off)	Turn-off delay time		-	166	-	ns
f	Fall time		-	146	-	ns
on	Turn-on energy		-	1.1	-	mJ
off	Turn-off energy		-	1.0	-	mJ
ts	Total switching energy		-	2.1	-	mJ

(  $v_j=25$  unless otherwise specified)

F	Diode forward voltage	$I_F=15A$	-	2.3	-	V
		$I_F=15A$ $v_j=175$	-	1.9	-	V
$t_{rr}$	Diode reverse recovery time	$V_R=600V$ $I_F=15A$ $d I_F/d t = -250A/\mu s$	-	223	-	ns
$I_{rrm}$	Diode peak reverse recovery current		-	8	-	A
$Q_{rr}$	Diode reverse recovery charge		-	718	-	nC
$t_{rr}$	Diode reverse recovery time	$V_R=600V$ $I_F=15A$ $d I_F/d t = -250A/\mu s$ $v_j=175$	-	396	-	ns
$I_{rrm}$	Diode peak reverse recovery current		-	11	-	A
$Q_{rr}$	Diode reverse recovery charge		-	1700	-	nC

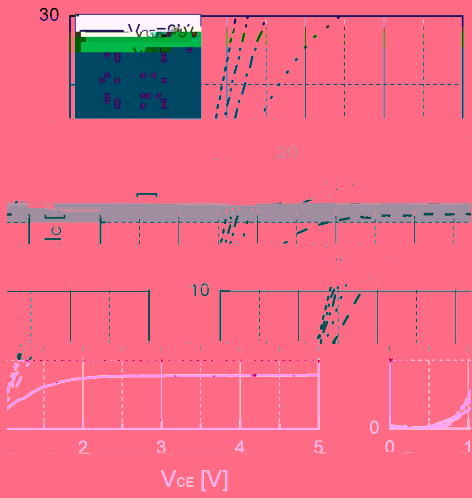


Fig 1. Typical output characteristic (  $v_j=25$  )

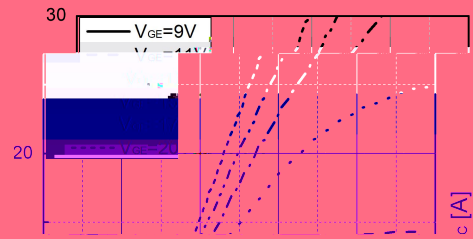


Fig 2. Typical output characteristic(  $v_j=175$  )

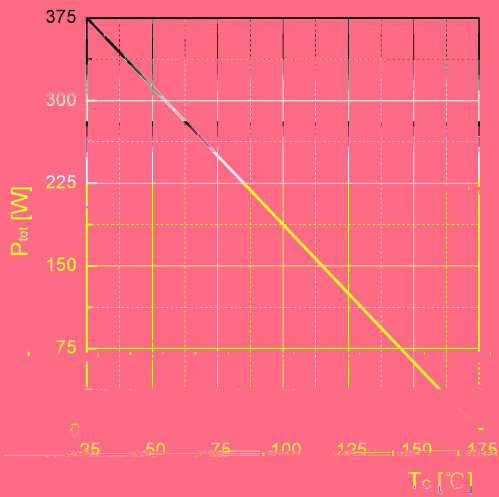


Fig 3. Power dissipation as a function of

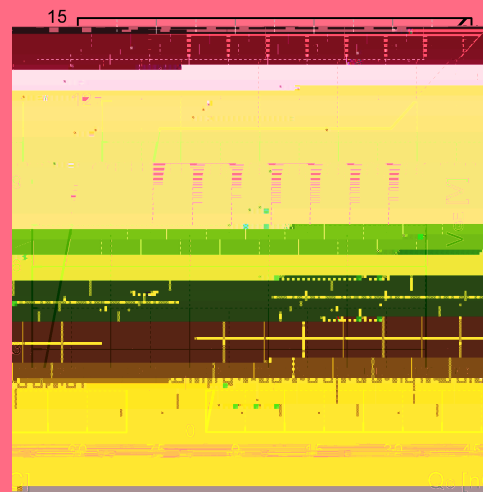


Fig 4. Typical Gate charge

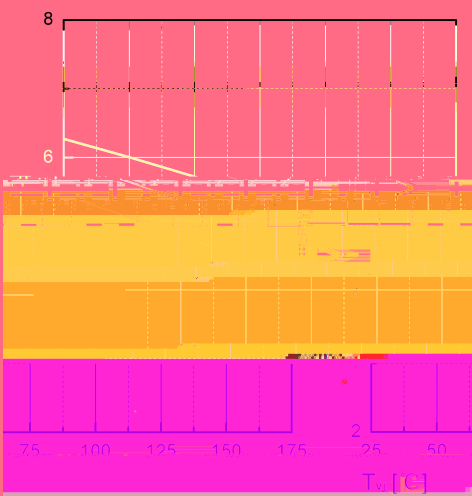


Fig 5. Typical  $V_{GE(th)}$  as a function of  $v_j$   
(  $i_c=1mA$  )



Fig 6. Typical  $F$  as a function of  $v_j$



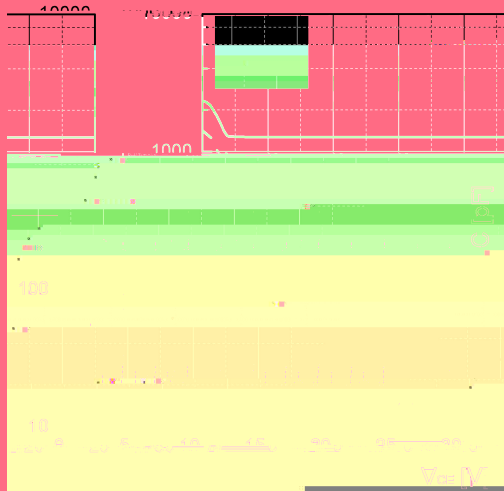


Fig 13. Typical capacitance as a function of  $C_E$   
( $f=1\text{Mhz}$ ,  $V_{GE}=0\text{V}$ )

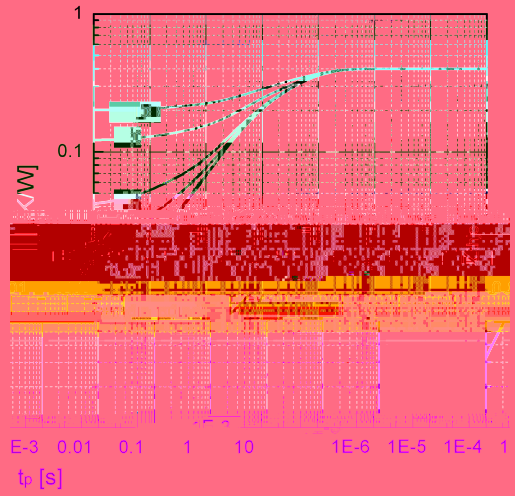
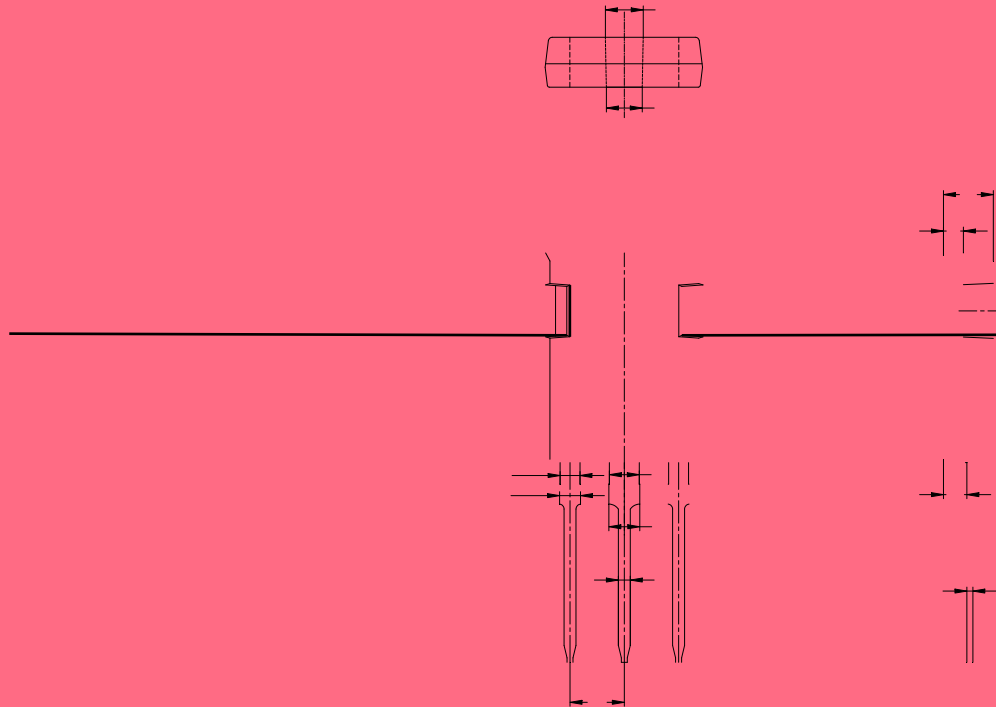


Fig 14. Transient thermal impedance of IGBT



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Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	21.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G	5.25	-	5.65	0.207	-	0.222
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031
M	2.80	3.00	3.20	0.110	0.118	0.126
N	2.90	3.10	3.30	0.114	0.122	0.130



Date	Revision	Changes
2024-08-27	Rev 1.0	Release of the datasheet

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