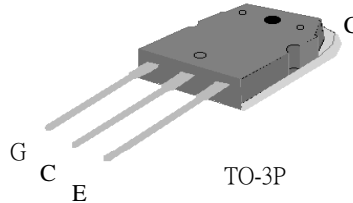


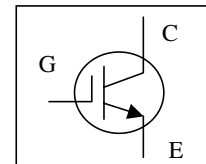


Features

- ▼ High Speed Switching
- ▼ Low Saturation Voltage
 $V_{CE(sat),Typ.}=2.5V@I_C=40A$
- ▼ RoHS Compliant & Halogen-Free



V_{CES}	600V
I_C	40A



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{CES}	Collector-Emitter Voltage	600	V
V_{GE}	Gate-Emitter Voltage	+30	V
$I_C@T_C=25^{\circ}C$	Collector Current	75	A
$I_C@T_C=100^{\circ}C$	Collector Current	40	A
I_{CM}	Pulsed Collector Current	150	A
$P_D@T_C=25^{\circ}C$	Maximum Power Dissipation	277	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	150	$^{\circ}C$
T_L	Maximum Lead Temp. for Soldering Purposes , 1/8" from case for 5 seconds .	300	$^{\circ}C$

Notes:

1.Pulse width limited by max. junction temperature .

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Thermal Resistance Junction-Case	0.45	$^{\circ}C/W$
Rthj-a	Thermal Resistance Junction-Ambient	40	$^{\circ}C/W$

Electrical Characteristics@ $T_J=25^{\circ}C$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
I_{GES}	Gate-to-Emitter Leakage Current	$V_{GE}=\pm 30V, V_{CE}=0V$	-	-	± 100	nA
I_{CES}	Collector-Emitter Leakage Current	$V_{CE}=600V, V_{GE}=0V$	-	-	500	μA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$V_{GE}=15V, I_C=40A$	-	2.5	2.9	V
		$V_{GE}=15V, I_C=75A$	-	3.3	-	V
$V_{GE(th)}$	Gate Threshold Voltage	$V_{CE}=V_{GE}, I_C=1mA$	3	-	7	V
Q_g	Total Gate Charge	$I_C=33A$	-	66	105	nC
Q_{ge}	Gate-Emitter Charge	$V_{CE}=400V$	-	12	-	nC
Q_{gc}	Gate-Collector Charge	$V_{GE}=15V$	-	36	-	nC
$t_{d(on)}$	Turn-on Delay Time	$V_{CE}=390V,$ $I_C=33A,$	-	15	-	ns
t_r	Rise Time	$V_{GE}=15V,$ $R_G=5\Omega,$	-	80	-	ns
$t_{d(off)}$	Turn-off Delay Time	Inductive Load	-	43	-	ns
t_f	Fall Time		-	160	320	ns
E_{on}	Turn-On Switching Loss		-	1.5	-	mJ
E_{off}	Turn-Off Switching Loss		-	0.75	-	mJ
C_{ies}	Input Capacitance	$V_{GE}=0V$	-	1400	2240	pF
C_{oes}	Output Capacitance	$V_{CE}=30V$	-	160	-	pF
C_{res}	Reverse Transfer Capacitance	$f=1.0MHz$	-	20	-	pF

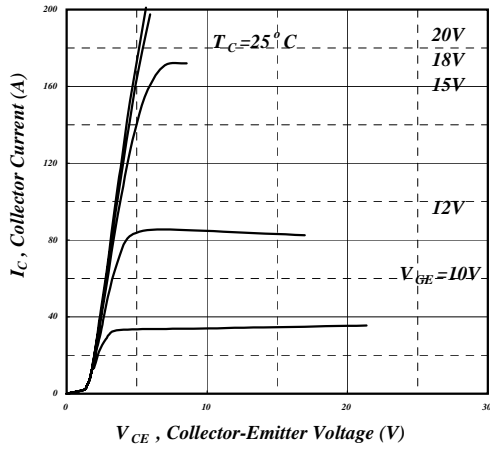


Fig 1. Typical Output Characteristics

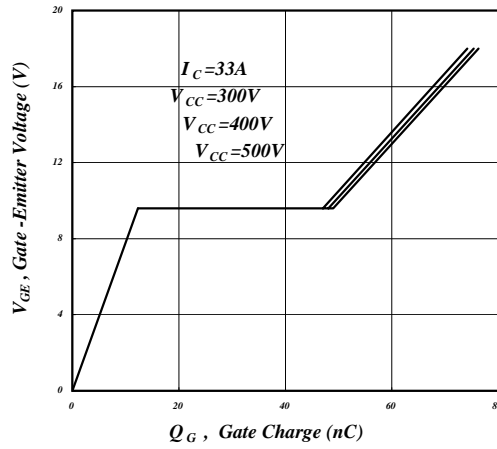


Fig 2. Gate Charge Characteristics

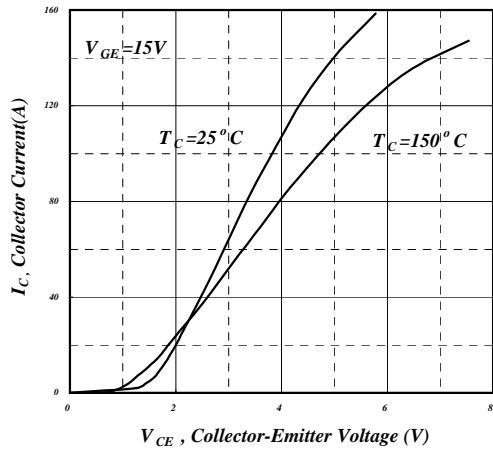


Fig 3. Typical Saturation Voltage Characteristics

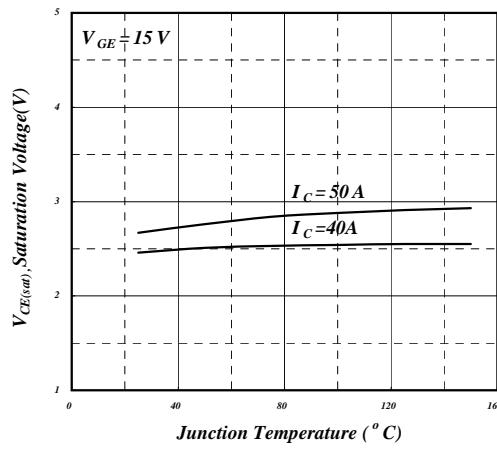


Fig 4. Typical Collector-Emmitter Voltage v.s. Junction Temperature

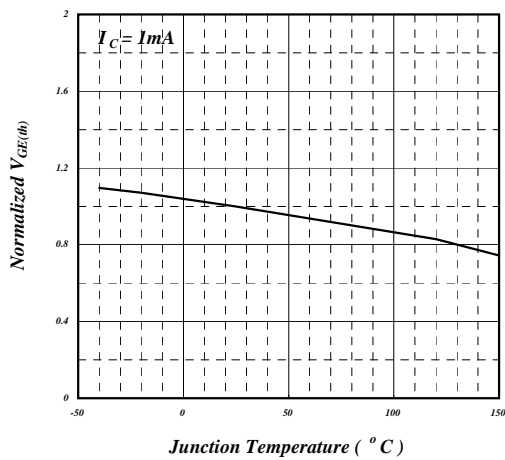


Fig 5. Gate Threshold Voltage v.s. Junction Temperature

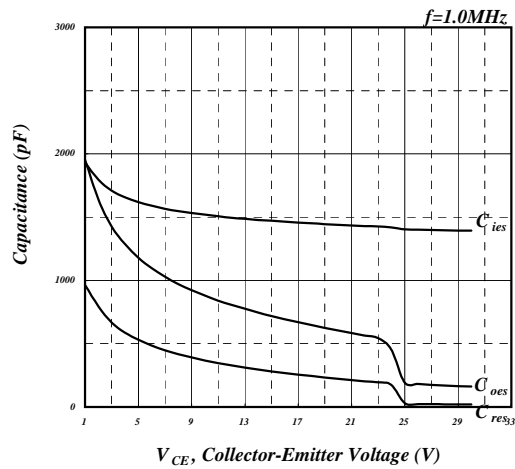


Fig 6. Typical Capacitance Characteristics

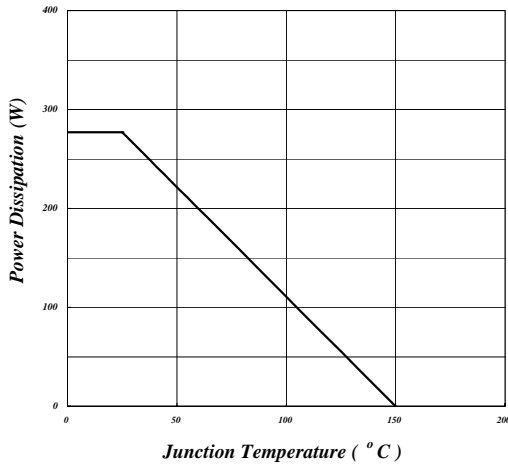


Fig 7. Power Dissipation vs. Junction Temperature

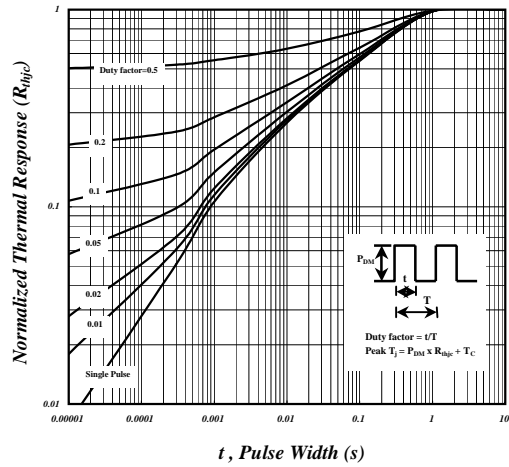


Fig 8. Effective Transient Thermal Impedance, Junction-to-Case (IGBT)

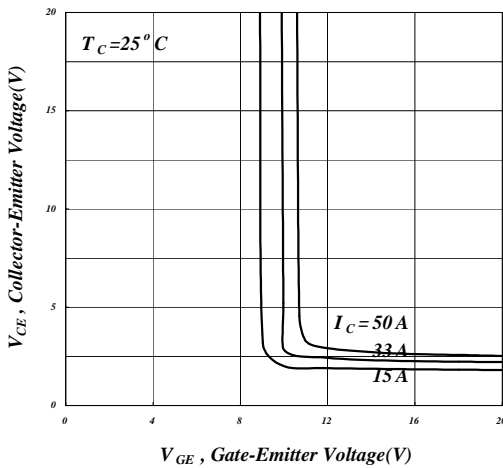


Fig 9. Saturation Voltage vs. V_{GE}

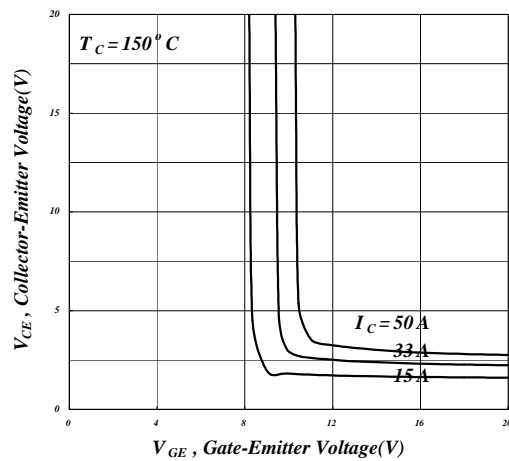


Fig 10. Saturation Voltage vs. V_{GE}

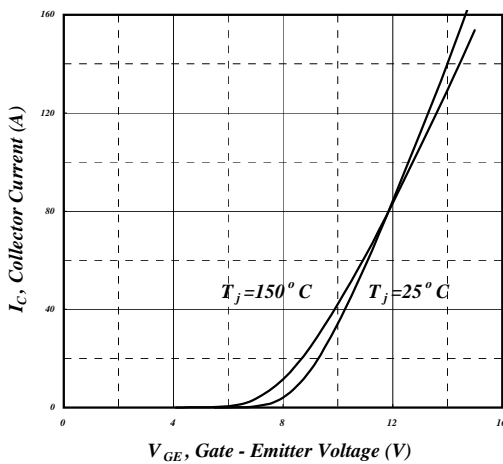


Fig 11. Transfer Characteristics

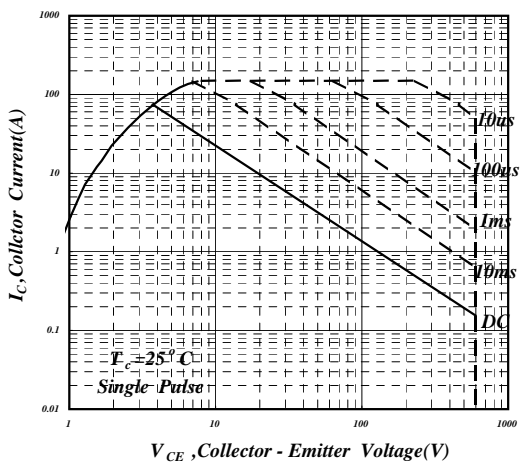


Fig 12. SOA Characteristics