Silicon NPN Triple Diffused Power Transistors

TO-220 Package

2SC2738(NPN)

Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	500	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	7	V
Peak Collector Current	I_{CM}	4	A
Collector Current	I_C	2	A
Base Current	I_B	.5	A
Collector Power Dissipation	P_C*	25	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

*Tc=25°C

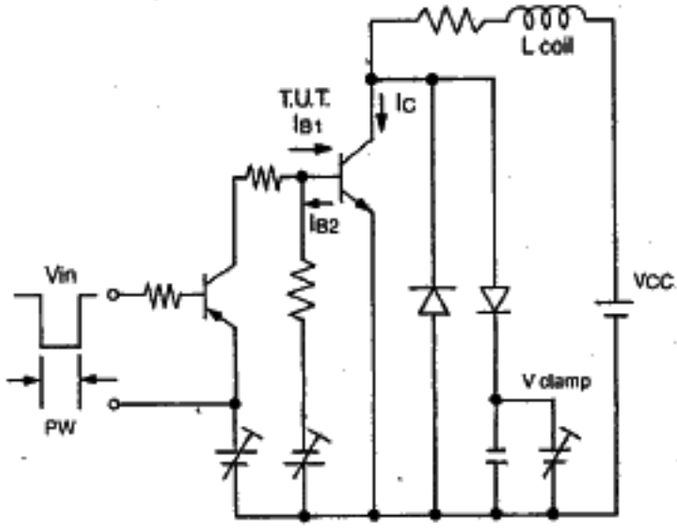
Applications:
- RF Power Amp
- Switching regulators
- Inverters
- Solenoid and Relay Drivers

Features:
- High-speed switching—tf: 1.0 μs (max.)
- High voltage/high reliability (glassivation adapted)—V_{CBO}: 500V (min.)
- Low collector saturation voltage—$V_{CE(sat)}$: 1V (max.)

Electrical Characteristics (Ta=25°C)

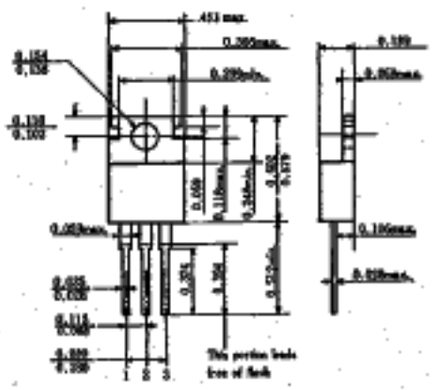
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector Cutoff Current	I_{CBO}	V_{CB}=500V, I_E=0			100	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			100	μA
Collector-Emitter Sustained Voltage	$V_{CEO(sus)}$	I_C=0.2A, L=25mH	400			V
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=0.1A	15			
	h_{FE}	V_{CE}=5V, I_C=1A	8			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=1A, I_B=.2A			1	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=1A, I_B=.2A			1.5	V
Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=.2A		11		MHz
Turn On Time	ton				1	μs
Storage Time	ts	I_C=1A I_{B1}=−I_{B2} =.2A			3	μs
Fall Time	tf				1	μs

Specifications are subject to change for improvement without prior notice.



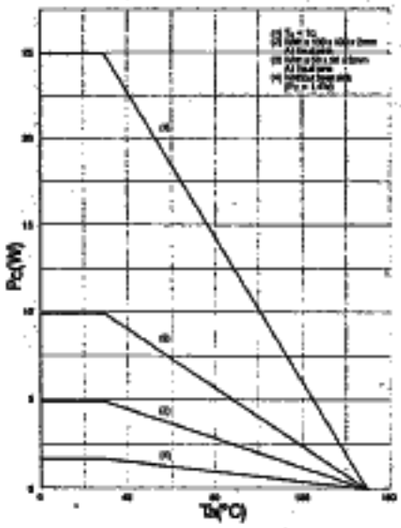
THE COLLECTOR IS IN ELECTRICAL CONTACT WITH THE MOUNTING TAB

Unit: inch

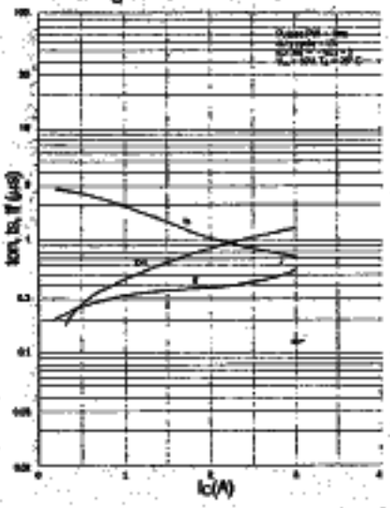


Typical Characteristics

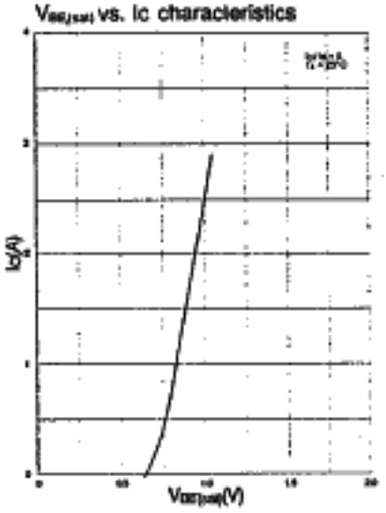
Pc vs. Ta characteristics



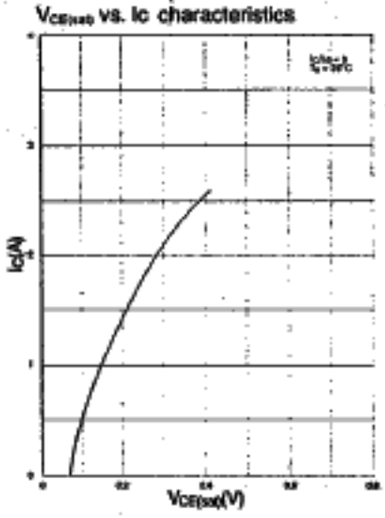
Switching Time



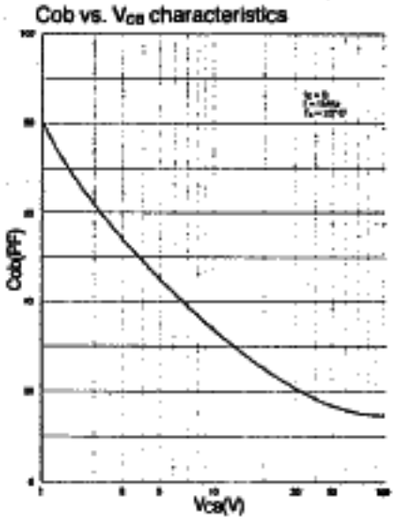
$V_{BE(sat)}$ vs. Ic characteristics



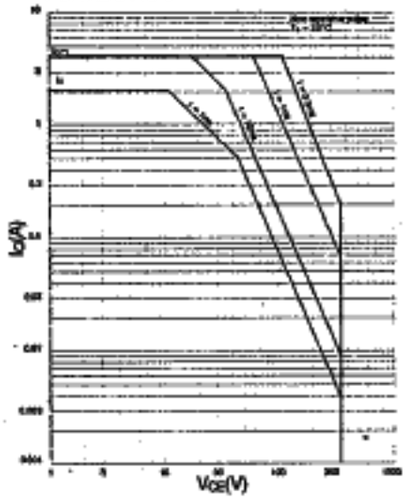
$V_{CE(sat)}$ vs. Ic characteristics



Cob vs. V_{CB} characteristics



Forward ASO



h_{FE} vs Ic characteristics