Silicon NPN Power Transistors 2SC3748

DESCRIPTION

·With TO-220F package
·Low saturation voltage.
·Excellent dependence of h_{FE} on current.
·Fast switching speed.

APPLICATIONS

·Car-use inductance drivers, lamp drivers.
·Inverters drivers, conveters (strobes, flashes, FLT lighting circuits).
·Power amplifiers
·High-speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

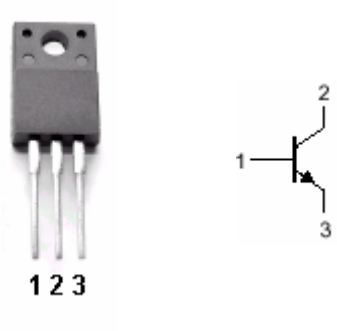

Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	80	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		10	A
I_{CM}	Collector current-peak		12	A
P_C	Collector dissipation		2	W
		T_C=25□	30	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=1mA; I_E=0	80			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA; R_{BE}=∞	60			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=1mA; I_C=0	5			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=5A; I_B=0.25A			0.4	V
I_{CBO}	Collector cut-off current	V_{CB}=40V ;I_E=0			100	μA
I_{EBO}	Emitter cut-off current	V_{EB}=4V; I_C=0			100	μA
h_{FE}	DC current gain	I_C=1A ; V_{CE}=2V	70		280	
f_T	Transition frequency	I_C=1A ; V_{CE}=5V		100		MHz
Switching times						
t_{on}	Turn-on time	V_{CC}=20V; I_C=5A I_{B1}=-I_{B2}=0.25A R_L=4Ω		0.1		μs
t_{stg}	Storage time			0.5		μs
t_f	Fall time			0.1		μs

◆ h_{FE} Classifications

Q	R	S
70-140	100-200	140-280

PACKAGE OUTLINE

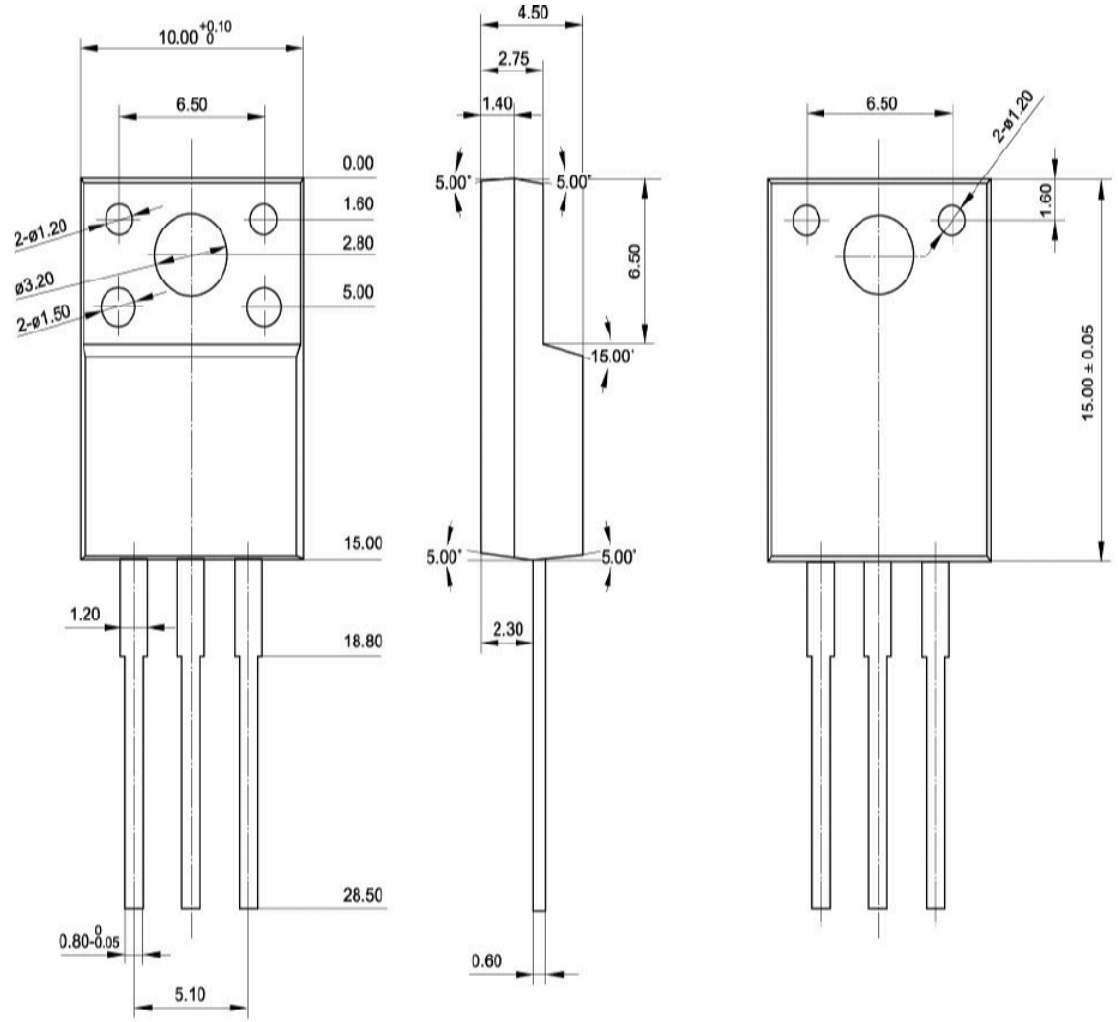

Fig.2 Outline dimensions

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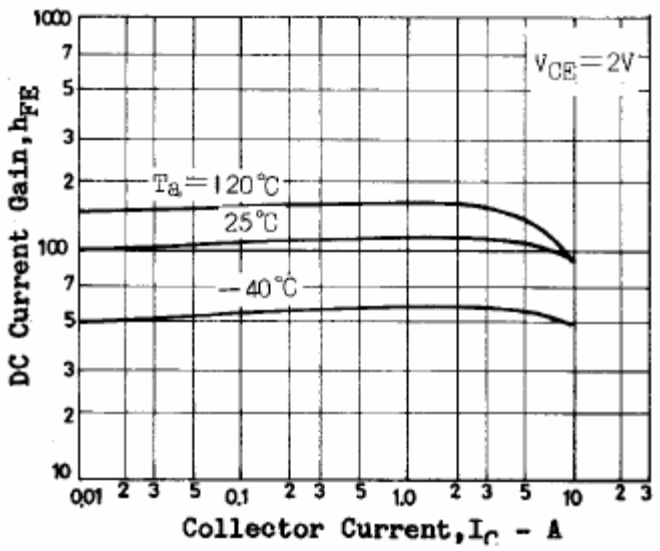

Fig.3 DC current Gain

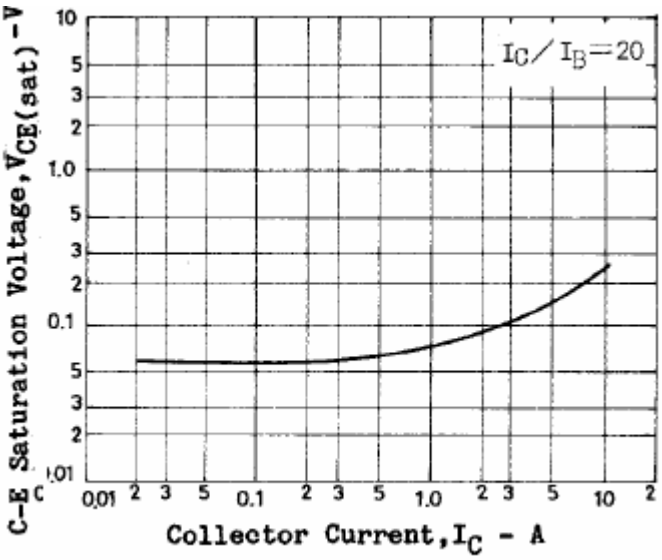

Fig.4 Collector-Emitter Saturation Voltage

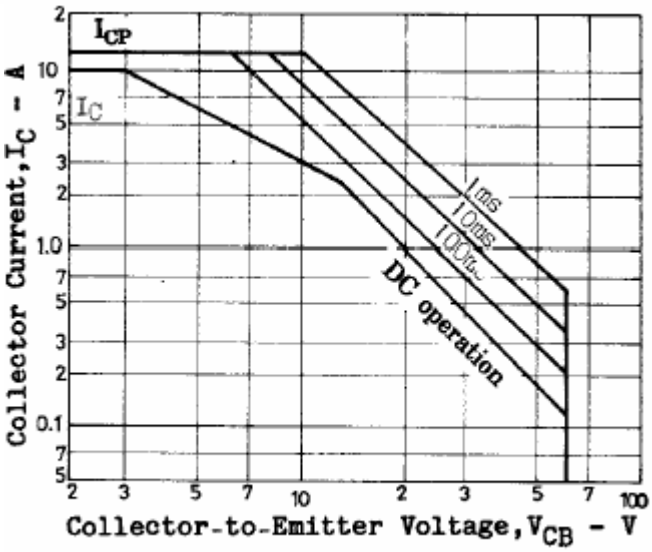

Fig.5 Safe Operating Area