Silicon NPN Power Transistors 2SC4163

DESCRIPTION

·With TO-220F package
·High breakdown voltage.
·High reliability.
·Fast switching speed
·Wide area of safe operation

APPLICATIONS

·Switching regulator applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

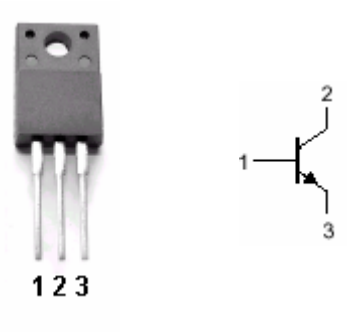

Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings (Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		12	A
I_{CM}	Collector current-peak		25	A
I_B	Base current		4	A
P_C	Collector dissipation	T_C=25□	40	W
			2	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

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CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=10mA ; R_{BE}=∞	400			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=1mA ; I_E=0	500			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=1mA ; I_C=0	7			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=8A ;I_B=1.6A			0.8	V
V_{BEsat}	Base-emitter saturation voltage	I_C=8A ;I_B=1.6A			1.5	V
I_{CBO}	Collector cut-off current	V_{CB}=400V; I_E=0			10	μA
I_{EBO}	Emitter cut-off current	V_{EB}=5V; I_C=0			10	μA
h_{FE-1}	DC current gain	I_C=1.6A ; V_{CE}=5V	15		50	
h_{FE-2}	DC current gain	I_C=8A ; V_{CE}=5V	10			
h_{FE-3}	DC current gain	I_C=10mA ; V_{CE}=5V	10			
C_{OB}	Output capacitance	I_E=0; V_{CB}=10V;f=1MHz		160		pF
f_T	Transition frequency	I_C=1.6A ; V_{CE}=10V		20		MHz
Switching times						
t_{on}	Turn-on time	I_C=10A; I_{B1}=2A I_{B2}=-4A V_{CC}=200V ,R_L=20Ω			0.5	μs
t_s	Storage time				2.5	μs
t_f	Fall time				0.3	μs

◆ h_{FE-1} Classifications

L	M	N
15-30	20-40	30-50

PACKAGE OUTLINE

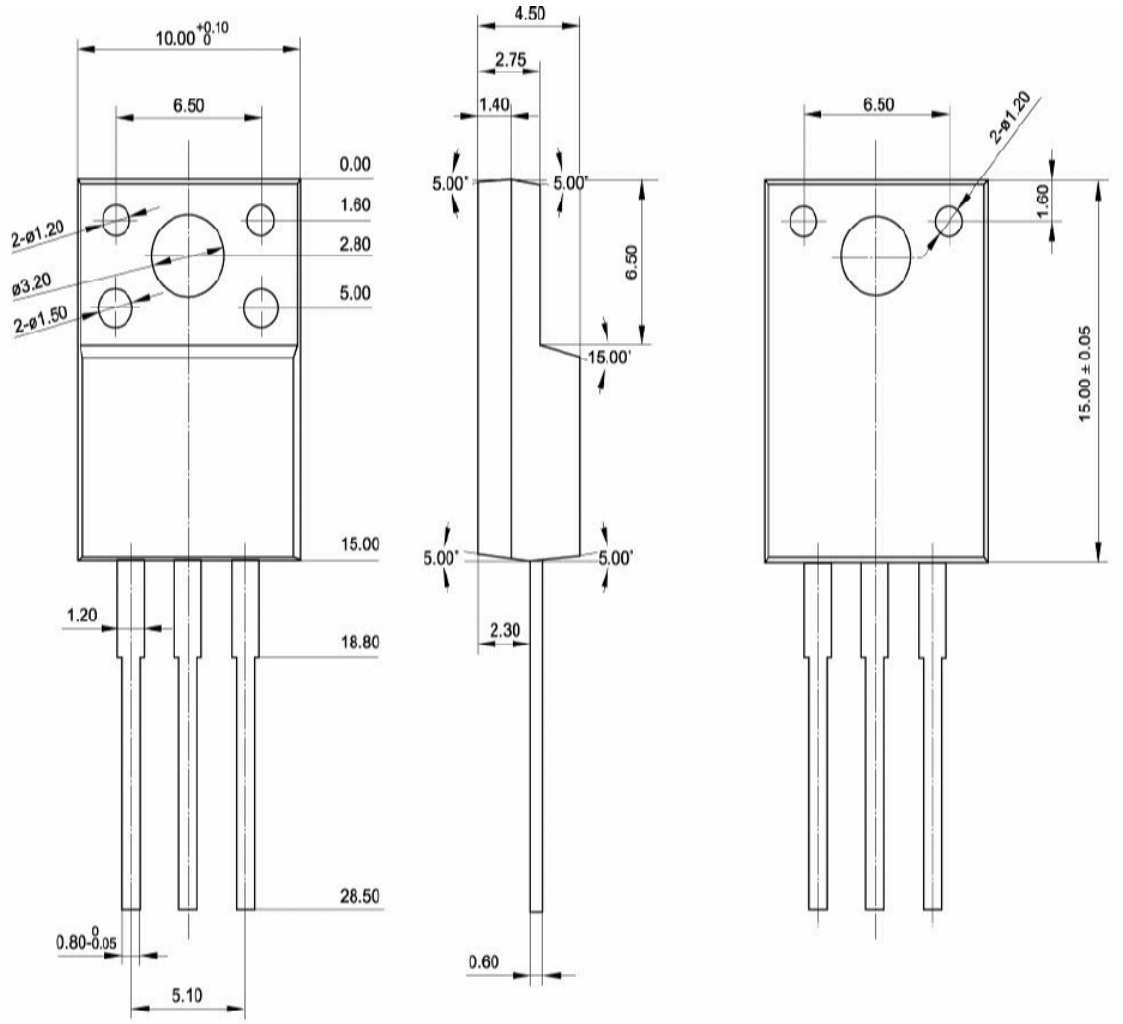

Fig.2 Outline dimensions

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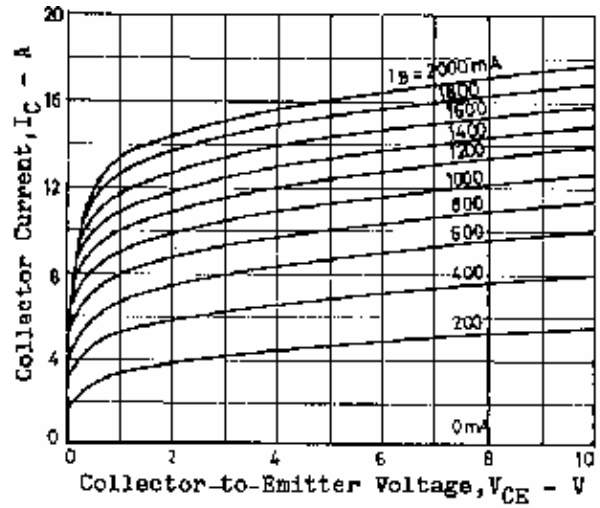

Fig.3 Static Characteristic

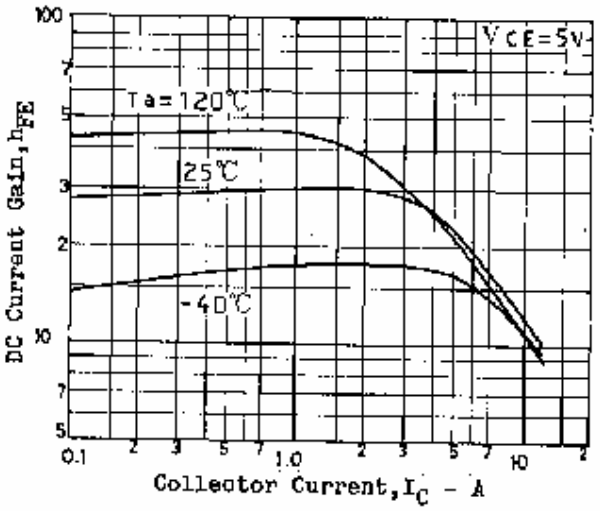

Fig.4 DC current Gain

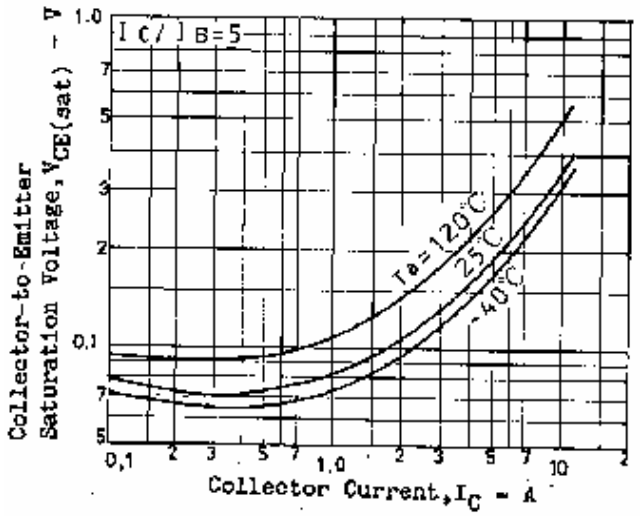

Fig.5 Collector-Emitter Saturation Voltage

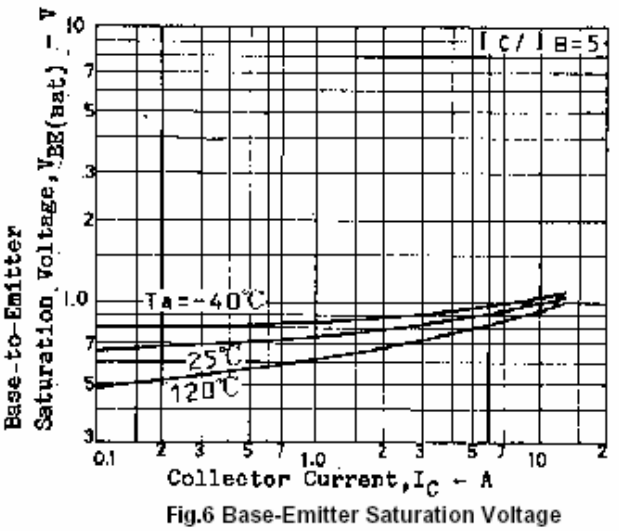

Fig.6 Base-Emitter Saturation Voltage

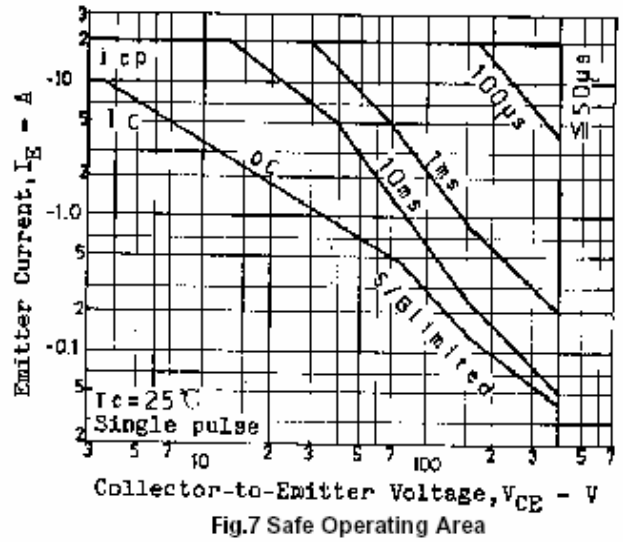

Fig.7 Safe Operating Area