Silicon PNP Power Transistors 2SA1646

DESCRIPTION

·With TO-220 package
·Fast switching speed
·Low collector saturation voltage

APPLICATIONS

·For use in switching power supplies,DC-DC converters,motor drivers,solenoid drivers, and other low-voltage power supply devices, as well as for high current switching

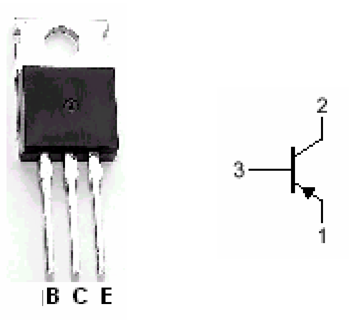

Fig.1 simplified outline (TO-220) and symbol

PINNING

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

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	-150	V
V_{CEO}	Collector-emitter voltage	Open base	-100	V
V_{EBO}	Emitter-base voltage	Open collector	-7	V
I_C	Collector current		-10	A
I_{CM}	Collector current-peak	PW≤300μs, duty cycle≤10%	-20	A
I_B	Base current		-6	A
P_T	Total power dissipation	T_a=25□	1.5	W
		T_C=25□	40	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEsat\text{-}1}$	Collector-emitter saturation voltage	I_C=-6A; I_B=-0.3A			-0.3	V
$V_{CEsat\text{ -}2}$	Collector-emitter saturation voltage	I_C=-8A; I_B=-0.4A			-0.5	V
$V_{BE\ sat\ \text{-}1}$	Base-emitter saturation voltage	I_C=-6A; I_B=-0.3A			-1.2	V
$V_{BE\ sat\ \text{-}2}$	Base-emitter saturation voltage	I_C=-8A; I_B=-0.4A			-1.5	V
I_{CBO}	Collector cut-off current	V_{CB}=-100V; I_E=0			-10	μA
I_{EBO}	Emitter cut-off current	V_{EB}=-5V; I_C=0			-10	μA
$h_{FE\text{-}1}$	DC current gain	I_C=-0.5A ; V_{CE}=-2V	100			
$h_{FE\text{-}2}$	DC current gain	I_C=-2A ; V_{CE}=-2V	100		400	
$h_{FE\text{-}3}$	DC current gain	I_C=-6A ; V_{CE}=-2V	60			
C_{OB}	Output capacitance	I_E=0 ; V_{CB}=-10V;f=1MHz		250		pF
f_T	Transition frequency	I_C=-0.5A ; V_{CE}=-10V		150		MHz

Switching times

t_{on}	Turn-on time	$_C$=-6A ; V_{CC}=-50V I_{B1}=-I_{B2}=-0.3A;R_L=8.3Ω		0.3		μs
t_{stg}	Storage time			1.5		μs
t_f	Fall time			0.4		μs

◆ $h_{FE\text{-}2}$ Classifications

M	L	K
100-200	150-300	200-400

PACKAGE OUTLINE

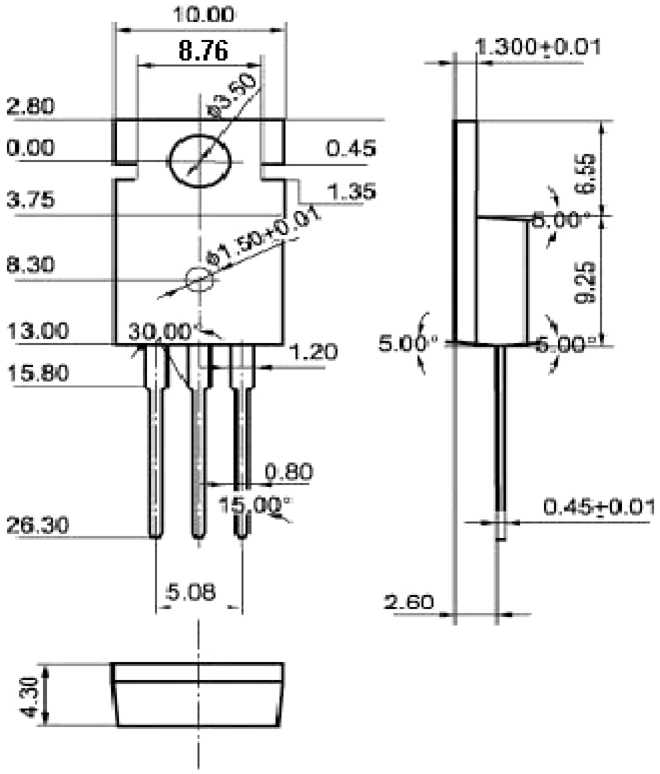

Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)