Silicon NPN Power Transistors 2N5294 2N5296 2N5298

DESCRIPTION

·With TO-220 package
·High power dissipation

APPLICATIONS

·Power amplifier and medium speed switching applications

PINNING

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

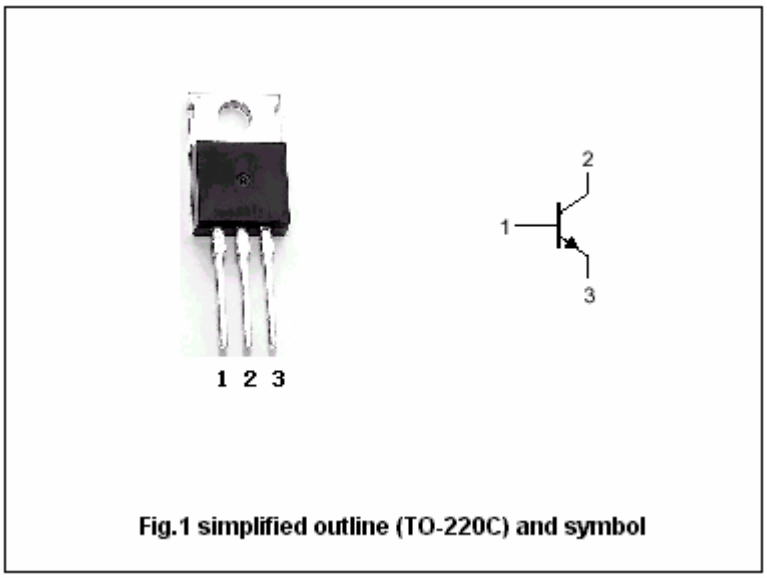

Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2N5294	Open emitter	80	V
		2N5296		60	
		2N5298		80	
V_{CEO}	Collector-emitter voltage	2N5294	Open base	70	V
		2N5296		40	
		2N5298		60	
V_{EBO}	Emitter-base voltage		Open collector	7	V
I_C	Collector current			4	A
I_B	Base current			2	A
P_T	Total power dissipation		T_C=25□	36	W
T_j	Junction temperature			150	□
T_{stg}	Storage temperature			-65~150	□

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal resistance from junction to case	3.47	□/W

CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	2N5294	I_C=0.1A ;I_B=0	70			V
		2N5296		40			
		2N5298		60			
V_{CEsat}	Collector-emitter saturation voltage	2N5294	I_C=0.5A;I_B=0.05A			1.0	V
		2N5296	I_C=1.0A;I_B=0.1A				
		2N5298	I_C=1.5A;I_B=0.15A				
V_{BE}	Base-emitter on voltage	2N5294	I_C=0.5A ; V_{CE}=4V			1.1	V
		2N5296	I_C=1.0A ; V_{CE}=4V			1.3	
		2N5298	I_C=1.5A ; V_{CE}=4V			1.5	
I_{CEV}	Collector cut-off current	2N5294/5298	V_{CE}=65V;V_{BE}=1.5V T_C=150□			0.5 3.0	mA
		2N5296	V_{CE}=35V;V_{BE}=1.5V T_C=150□			2.0 5.0	
I_{CER}	Collector cut-off current	2N5294/5298	V_{CE}=50V;R_{BE}=100Ω T_C=150□			0.5 2.0	mA
I_{EBO}	Emitter cut-off current	2N5294	V_{EB}=7V; I_C=0			1.0	mA
		2N5296/5298	V_{EB}=5V; I_C=0				
h_{FE}	DC current gain	2N5294	I_C=0.5A ; V_{CE}=4V	30		120	
		2N5296	I_C=1.0A ; V_{CE}=4V				
		2N5298	I_C=1.5A ; V_{CE}=4V	20		80	
f_T	Transition frequency		I_C=0.2A ; V_{CE}=4V	0.8			MHz
t_{on}	Turn-on time	2N5294	I_C=0.5A;I_B=0.05A;V_{CC}=30V			5.0	μs
		2N5296	I_C=1.0A;I_B=0.1A;V_{CC}=30V				
		2N5298	I_C=1.5A;I_B=0.15A;V_{CC}=30V				
t_{off}	Turn-off time	2N5294	I_C=0.5A;I_B=0.05A;V_{CC}=30V			15	μs
		2N5296	I_C=1.0A;I_B=0.1A;V_{CC}=30V				
		2N5298	I_C=1.5A;I_B=0.15A;V_{CC}=30V				

PACKAGE OUTLINE

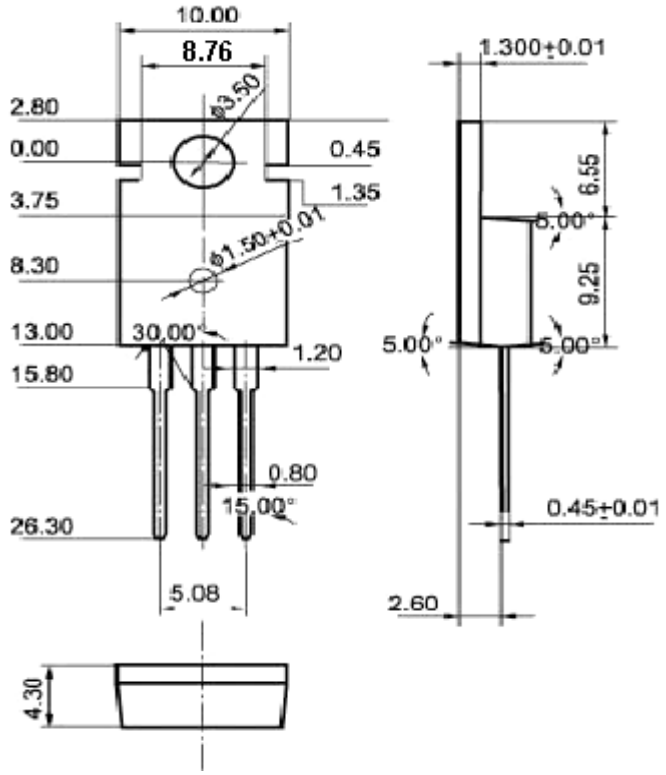

Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)