



SILICON PLASTIC POWER TRANSISTOR

NPN 2SD313

3A 30W

Technical Data

...designed for Low Frequency Power Amplifier.

☞ Collector-Emitter Voltage: $V_{CEO}=60V$

☞ DC Current Gain: 40 @ $I_C=2A$

☞ TO-220 Package

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector- Emitter Voltage	V_{CEO}	60	Vdc
Collector – Base Voltage	V_{CB}	60	Vdc
Emitter Base Voltage	V_{EB}	5	Vdc
Collector Current – Continuos	I_C	3	Adc
Base Current	I_B	0.3	Adc
Total Power Dissipation @ TC = 25°C Derate above 25°C	PD	30 0.24	Watts W/°C
Operating and Storage junction Temperature Range	T_j, T_{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max.	Unit
Thermal resistance junction to case	R_{thjc}	4.16	°C/W



ELECTRICAL CHARACTERISTICS : [$T_c = 25^\circ\text{C}$ unless otherwise noted]

Characteristic	Symbol	Min	Typ	Max	Unit
* OFF CHARACTERISTICS :					
Collector–Emitter Breakdown Voltage [$I_c = 50\text{ mA}$, $I_B = 0$]	$V_{CEO(sus)}$	60			Vdc
Collector Cutoff Current [$V_{CB} = 20\text{ Vdc}$, $I_B = 0$]	I_{CB0}			100	μA
Collector–Base Breakdown Voltage [$I_c = 1\text{ mA}$, $I_E = 0$]	BV_{CBO}	60			Vdc
Emitter Cutoff Current [$V_{EB} = 5\text{ Vdc}$, $I_C = 0$]	I_{EBO}			100	μA
* ON CHARACTERISTICS (1):					
DC Current Gain [$I_c = 0.1\text{ A}$, $V_{CE} = 2.0\text{ Vdc}$] [$I_c = 2\text{ A}$, $V_{CE} = 2.0\text{ Vdc}$]	h_{FE}	40 40		320	
Collector-Emitter Saturation Voltage [$I_c = 2\text{ A}$, $I_B = 0.2\text{ A}$]	$V_{CE(sat)}$			1	Vdc
Emitter–Base Saturation Voltage [$I_c = 1\text{ A}$, $V_{CE} = 2\text{ V}$]	$V_{BE(ON)}$			1	Vdc
DYNAMIC CHARACTERISTICS :					
Current Gain – Bandwidth Product [$I_c = 0.5\text{ A}$, $V_{CE} = 5\text{ Vdc}$, $f_{test} = 1.0\text{ MHz}$]	f_T		8		MHz

Σ (1) Pulse Test : Pulse Width $< 300\mu\text{s}$, Duty Cycle $< 2.0\%$