

### 2SD313 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$$P_{CM}: 1.75 \text{ W (Tamb=25°C)}$$

Collector current

$$I_{CM}: 3 \text{ A}$$

Collector-base voltage

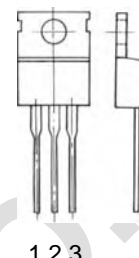
$$V_{(BR)CBO}: 60 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55°C \text{ to } +150°C$$

#### TO-220

1. BASE
2. COLLECTOR
3. EMITTER



#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			100	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE}=60V, I_E=0$			1	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			100	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=1A$	40		320	
	$h_{FE(2)}$	$V_{CE}=2V, I_C=0.1A$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2A, I_B=200mA$			1	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=2V, I_C=1A$			1.5	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=500mA$		8		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		65		pF

#### CLASSIFICATION OF $h_{FE(1)}$

Rank	C	D	E	F
Range	40-80	60-120	100-200	160-320