

### 2SD1513 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$$P_{CM}: 0.625 \text{ W (Tamb=25°C)}$$

Collector current

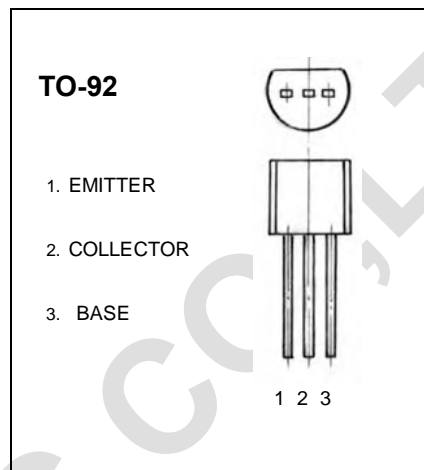
$$I_{CM}: 2 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 20 \text{ V}$$

Operating and storage junction temperature range

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



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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	20			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	16			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=16V, I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6V, I_C=0$			0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=100mA$	135		650	
	$h_{FE(2)}$	$V_{CE}=2V, I_C=1.5A$	100			
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=1A, I_B=10mA$			0.4	V
	$V_{CE(sat)(2)}$	$I_C=1.5A, I_B=20mA$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1.5A, I_B=75mA$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=6V, I_C=5mA$			0.65	V
Transition frequency	$f_T$	$V_{CE}=10V, I_C=50mA$	100			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		28		pF

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

Rank	L	K	U
Range	135-270	200-400	300-650