

### 2SD1616 TRANSISTOR (NPN)

**FEATURE**

Power dissipation

$P_{CM}$ : 0.75 W ( $T_{amb}=25^{\circ}C$ )

Collector current

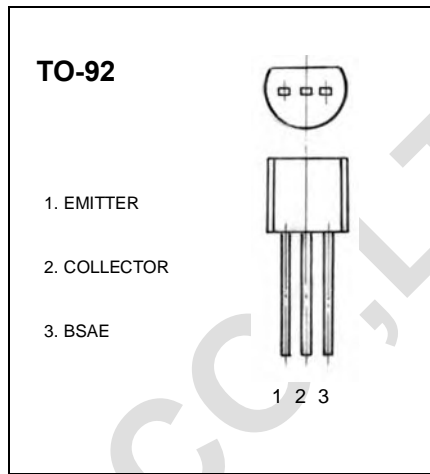
$I_{CM}$ : 1 A

Collector-base voltage

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

Operating and storage junction temperature range

$T_J, T_{stg}$ :  $-55^{\circ}C$  to  $+150^{\circ}C$



**ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}C$  unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2mA, I_B=0$	50		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6		V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$		0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6V, I_C=0$		0.1	$\mu A$
DC current gain	$h_{FE1}$	$V_{CE}=2V, I_C=100mA$	135	600	
	$h_{FE2}$	$V_{CE}=2V, I_C=1A$	81		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C=1A, I_B=50mA$		0.3	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C=1A, I_B=50mA$		1.2	V
Base-emitter voltage *	$V_{BE}$	$V_{CE}=2V, I_C=50mA$		0.7	V
Transition frequency	$f_T$	$V_{CE}=2V, I_C=100mA$	100		MHz
Output capacitance	$C_{ob}$	$V_{CE}=10V, I_E=0, f=1MHz$		25	pF
Turn on time	$t_{on}$	$V_{CC}=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA$ $V_{be(off)}=-2\sim -3V$		0.07 typ	ms
Storage time	$t_s$			0.95 typ	ms
Fall time	$t_f$			0.07 typ	ms

\*pulse test:  $PW \leq 350\mu S, \delta \leq 2\%$ .

**CLASSIFICATION OF  $h_{FE1}$**

Rank	Y	G	L
Range	135-270	200-400	300-600