

2SD1616A TRANSISTOR (NPN)

FEATURE

Power dissipation

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

Collector current

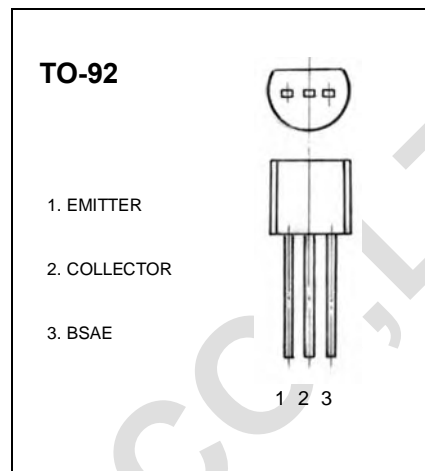
$$I_{CM}: 1 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 120 \text{ V}$$

Operating and storage junction temperature range

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



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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	120		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 2 \text{ mA}, I_B = 0$	60		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$		0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$		0.1	μA
DC current gain	h_{FE1}	$V_{CE} = 2 \text{ V}, I_C = 100\text{mA}$	135	600	
	h_{FE2}	$V_{CE} = 2 \text{ V}, I_C = 1 \text{ A}$	81		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 1 \text{ A}, I_B = 50\text{mA}$		0.3	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 1 \text{ A}, I_B = 50\text{mA}$		1.2	V
Base-emitter voltage *	V_{BE}	$V_{CE} = 2 \text{ V}, I_C = 50\text{mA}$		0.7	V
Transition frequency	f_T	$V_{CE} = 2 \text{ V}, I_C = 100\text{mA}$	100		MHz
Output capacitance	C_{ob}	$I_E = 0, f = 1\text{MHz}$		25	pF
Turn on time	t_{on}	$V_{CC} = 10\text{V}, I_C = 100\text{mA}, I_{B1} = -I_{B2} = 10\text{mA}, V_{BE(OFF)} = -2 \sim -3\text{V}$		0.07 typ	ms
Storage time	t_s			0.95 typ	ms
Fall time	t_f			0.07 typ	ms

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

CLASSIFICATION OF h_{FE1}

Rank	L	K	U
Range	135-270	200-400	300-600