

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 $+150^{\circ}C$ **TO-92**

1. EMITTER
2. COLLECTOR
3. BASE

**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	$V_{(BR)CEO}$	$I_C = 2 mA, I_B = 0$	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	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6V, I_C = 0$		0.1	μA
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