2SD1616A TRANSISTOR（NPN）

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Low collector saturation voltage
- High break down voltage
- High total power dissipation

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Power Dissipation	0.5	W
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA , I_E=0	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA , I_B=0	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, 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	0.6		0.7	V
Transition frequency	f_T	V_{CE}=2V, I_C= 100mA	100			MHz
Output capacitance	C_{ob}	V_{CB}=10 V,I_E= 0, f=1MHz			19	pF
Turn on time	t_{on}	Vcc=10V, I_C=100mA, I_{B1}=-I_{B2}=10mA		0.07		μs
Storage time	t_S			0.95		μs
Fall time	t_F			0.07		μs

*pulse test: PW≤350μs, δ≤2%.

CLASSIFICATION of h_{FE1}

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