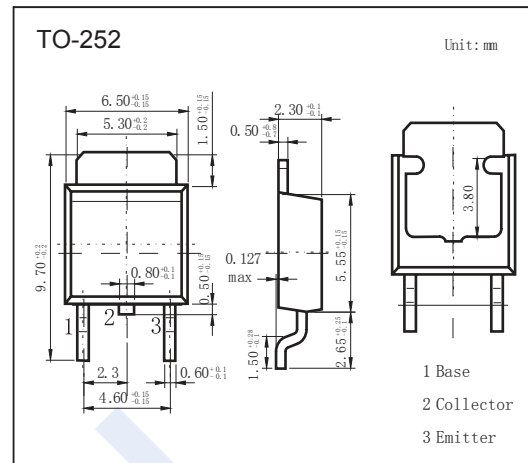


NPN Transistors

2SD1733

■ Features

- High V_{CEO} , $V_{CEO}=80V$
- High I_C , $I_C=1A$ (DC)
- Low $V_{CE(sat)}$
- Complementary to 2SB1181

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	120	V
Collector - Emitter Voltage	V_{CEO}	80	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	1	A
Collector Current - Pulse	I_{CP}	2	
Collector Power Dissipation $T_c=25^\circ C$ $T_a=25^\circ C$	P_C	10	W
		1	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	$I_C = 100 \mu A$, $I_E = 0$	120			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 1 \text{ mA}$, $I_B = 0$	80			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu A$, $I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 100 \text{ V}$, $I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4 \text{ V}$, $I_C = 0$			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$		0.15	0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 3 \text{ V}$, $I_C = 500 \text{ mA}$	120		390	
Collector Output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		20		pF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}$, $I_E = -50 \text{ mA}$, $f = 100 \text{ MHz}$		100		MHz

■ Classification of h_{FE}

Type	2SD1733-Q	2SD1733-P
Range	120-270	180-390

NPN Transistors

2SD1733

■ Typical Characteristics

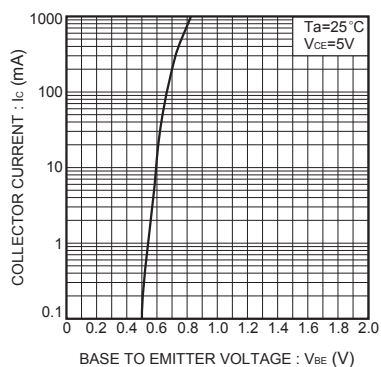


Fig.1 Grounded emitter propagation characteristics

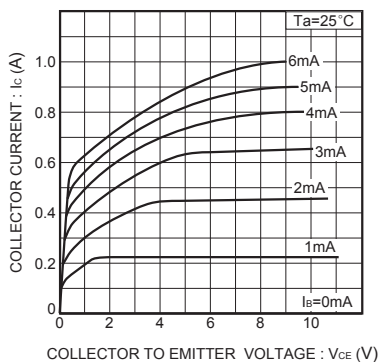


Fig.2 Grounded emitter output characteristics

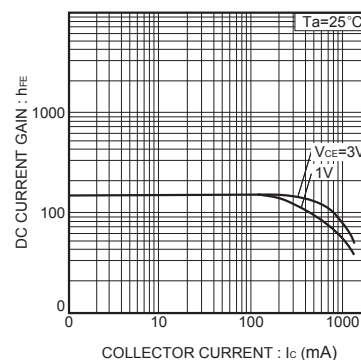


Fig.3 DC current gain vs. collector current

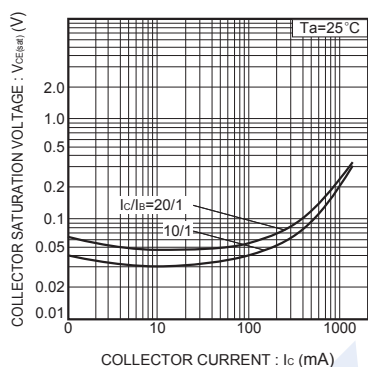


Fig.4 Collector-emitter saturation voltage vs. collector current

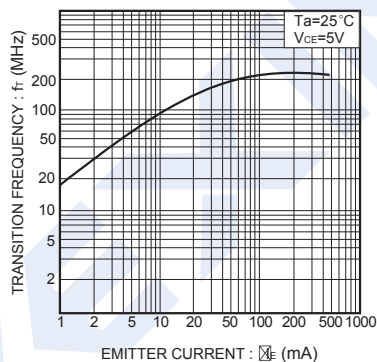


Fig.5 Gain bandwidth product vs. emitter current

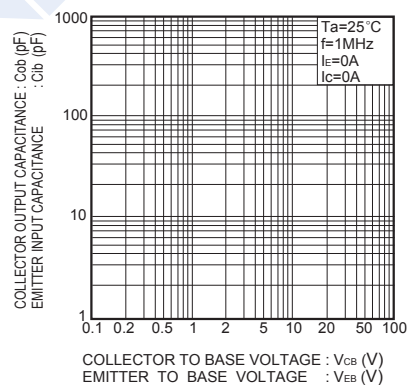


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage