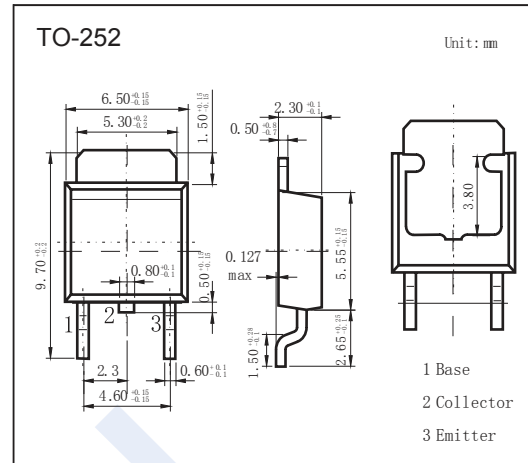


NPN Transistors

2SD1733

■ Features

- High V_{CE0} , $V_{CE0}=80V$
- 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_{CB0}	120	V	
Collector - Emitter Voltage	V_{CE0}	80		
Emitter - Base Voltage	V_{EB0}	5		
Collector Current - Continuous	I_c	1	A	
Collector Current - Pulse	I_{CP}	2		
Collector Power Dissipation	P_c	$T_c=25^\circ C$	10	W
		$T_a=25^\circ C$	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_{CB0}	$I_c=100 \mu A, I_E=0$	120			V
Collector-emitter breakdown voltage	V_{CE0}	$I_c=1 \text{ mA}, I_B=0$	80			
Emitter - base breakdown voltage	V_{EB0}	$I_E=100 \mu A, I_c=0$	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

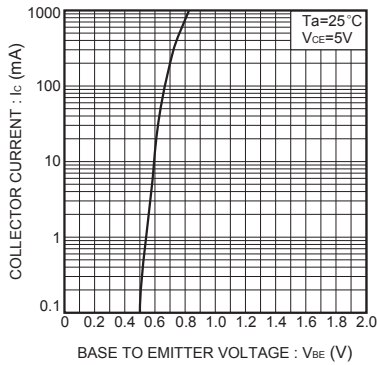


Fig.1 Grounded emitter propagation characteristics

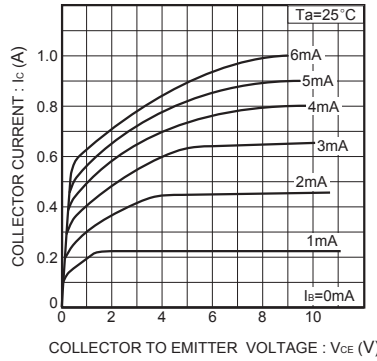


Fig.2 Grounded emitter output characteristics

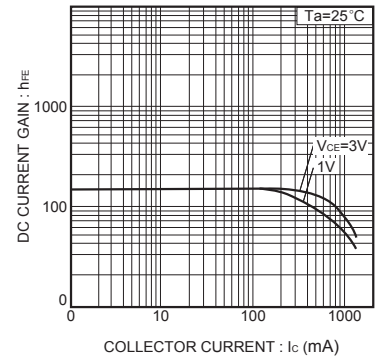


Fig.3 DC current gain vs. collector current

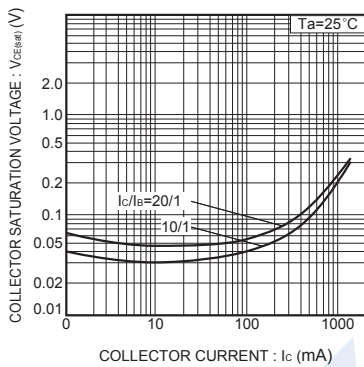


Fig.4 Collector-emitter saturation voltage vs. collector current

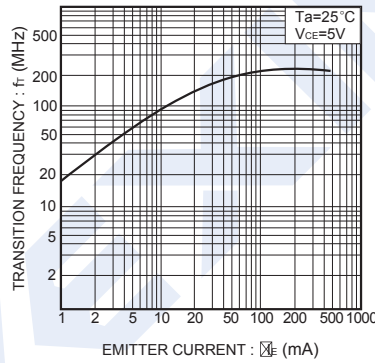


Fig.5 Gain bandwidth product vs. emitter current

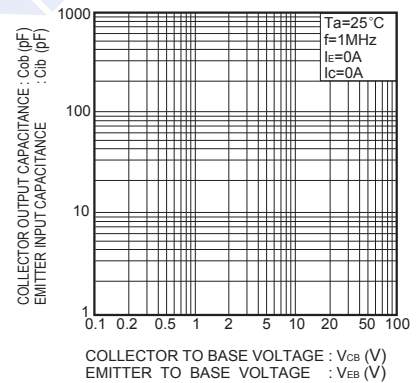


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage