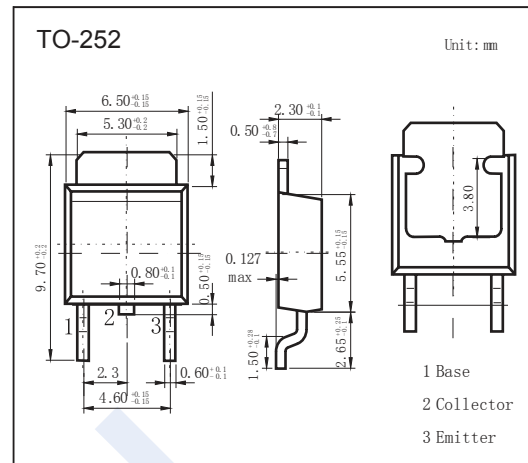


## NPN Transistors

## 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	$V_{CE0}$	$I_c=1\ mA, I_B=0$	80			
Emitter-base breakdown voltage	$V_{EB0}$	$I_E=100\ \mu A, I_C=0$	5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB}=100\ V, I_E=0$			1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\ V, I_C=0$			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c=500\ mA, I_B=50\ mA$		0.15	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_c=500\ mA, I_B=50\ mA$			1.2	
DC current gain	$h_{FE}$	$V_{CE}=3\ V, I_c=500\ mA$	120		390	
Collector Output capacitance	$C_{ob}$	$V_{CB}=10\ V, I_E=0, f=1\ MHz$		20		$\mu F$
Transition frequency	$f_t$	$V_{CE}=10\ V, I_E=-50\ mA, f=100\ MHz$		100		MHz

■ Classification of  $h_{fe}$ 

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

## NPN Transistors 2SD1733

■ Typical Characteristics

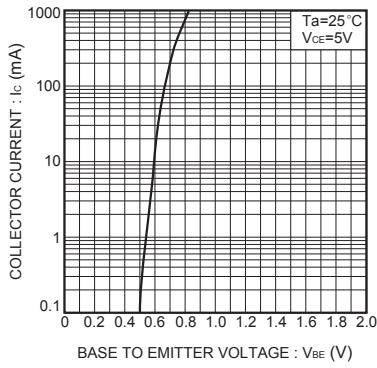


Fig.1 Grounded emitter propagation characteristics

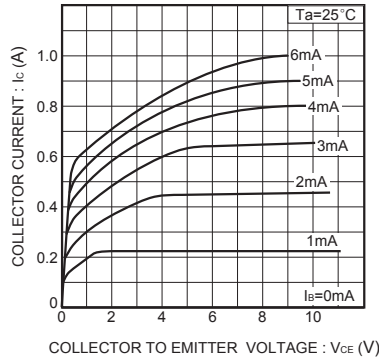


Fig.2 Grounded emitter output characteristics

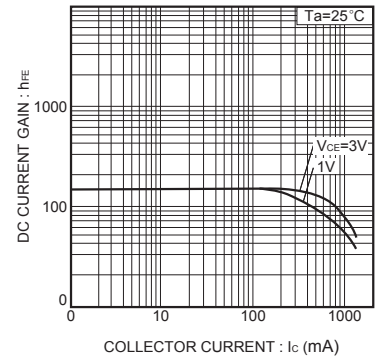


Fig.3 DC current gain vs. collector current

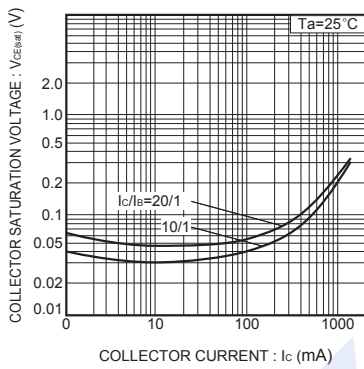


Fig.4 Collector-emitter saturation voltage vs. collector current

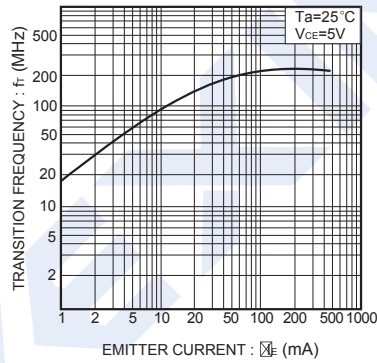


Fig.5 Gain bandwidth product vs. emitter current

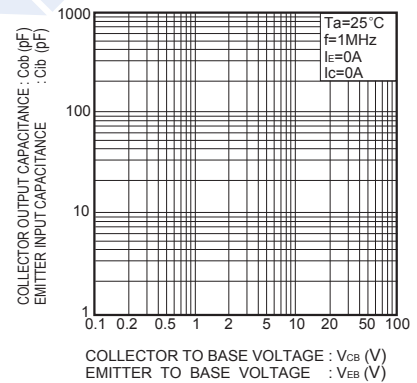


Fig.6 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage