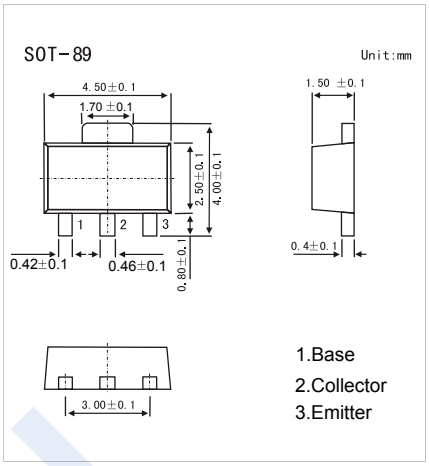
NPN Transistors

2SD2153



■ Features

- Low saturation voltage,
  typically $V_{CE(sat)}$ = 0.12V at I_C = IB = 1A / 20mA
- Excellent DC current gain characteristics.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	30	V
Collector - Emitter Voltage	V_{CEO}	25	
Emitter - Base Voltage	V_{EBO}	6	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse (Note.1)	I_{CP}	3	
Collector Power Dissipation	P_C	0.5	W
(Note.2)		2	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: Single pulse, Pw=10ms

Note.2: Mounted on a 40 X40X t0.7mm Ceramic substrate

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 uA, I_E= 0	30			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	25			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 uA, I_C= 0	6			
Collector-base cut-off current	I_{CBO}	V_{CB}= 20 V , I_E= 0			0.5	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1 A, I_B=20mA			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=1 A, I_B=20mA			1.2	
DC current gain	h_{FE}	V_{CE}= 6V, I_C= 500mA	560		2700	
Collector output capacitance	C_{ob}	V_{CB}= 10V, I_E= 0,f=1MHz		22		pF
Transition frequency	f_T	V_{CE}= 10V, I_E= -10mA,f=100MHz		110		MHz

■ Classification of hfe

Type	2SD2153-U	2SD2153-V	2SD2153-W
Range	560-1200	820-1800	1200-2700
Marking	DNU*	DNV*	DNW*

NPN Transistors

2SD2153

■ Typical Characterisitics

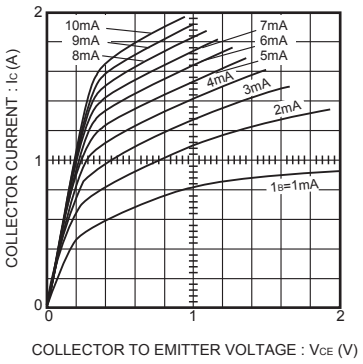


Fig.1 Ground emitter output characteristics

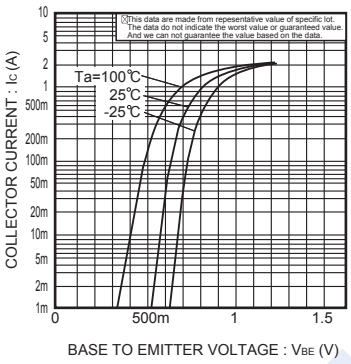


Fig.2 Ground emitter propagation characteristics

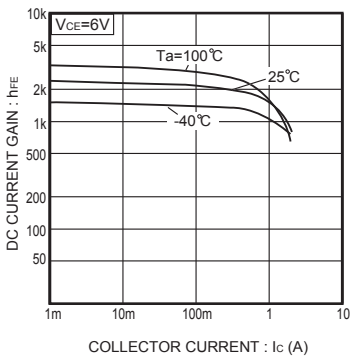


Fig.3 DC current gain

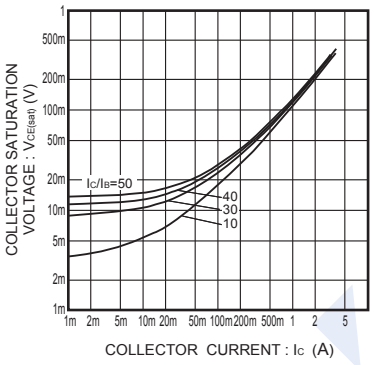


Fig.4 Collector-emitter saturation voltage vs. collector current

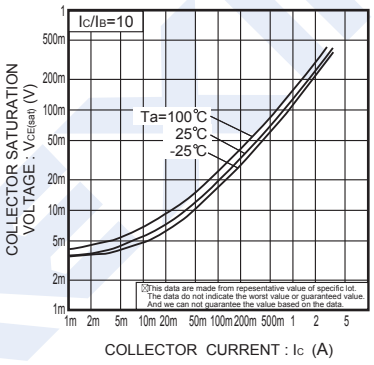


Fig.5 Collector-emitter saturation voltage vs. collector current

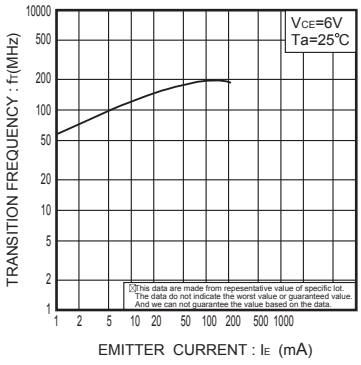


Fig.6 Gain bandwith product vs. emitter current

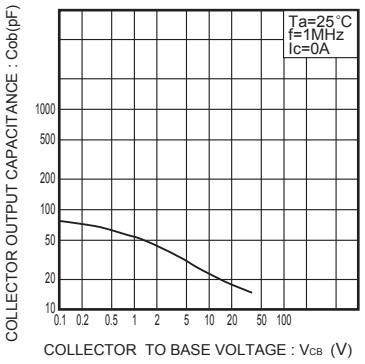


Fig.7 Collector output capacitance vs. collector-base voltage

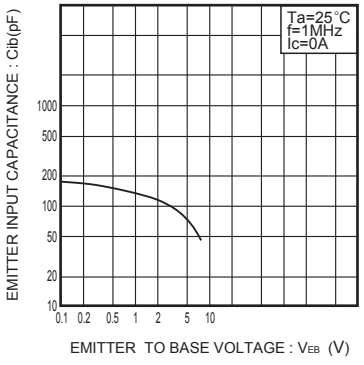


Fig.8 Emitter input capacitance vs. emitter-base voltage

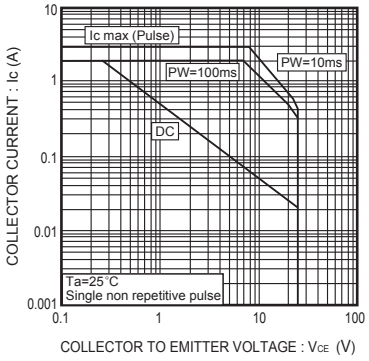


Fig.9 Safe operating area