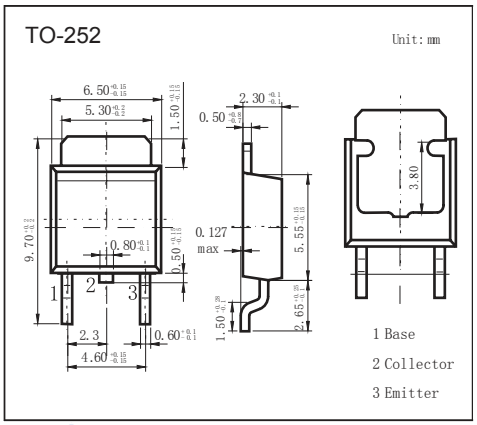
NPN Transistors

2SD1742A



■ Features

- High forward current transfer ratio hFE which has satisfactory linearity
- Low collector to emitter saturation voltage VCE(sat)
- Complementary to 2SB1172A

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	80	V
Collector - Emitter Voltage	V_{CEO}	80	
Emitter - Base Voltage	V_{EBO}	6	
Collector Current - Continuous	I_C	3	A
Collector Current - Pulse	I_{CP}	5	
Collector Power Dissipation Tc=25°C	P_C	15	W
Ta=25°C		1.3	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ 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	80			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 30 mA, I_B= 0	80			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 uA, I_C= 0	6			
Collector-base cut-off current	I_{CBO}	V_{CB}= 80 V , I_E= 0			0.1	mA
Collector-emitter cutoff current	I_{CES}	V_{CE} = 80V, V_{BE} = 0			200	uA
Collector-emitter cutoff current	I_{CEO}	V_{CE} = 60V, I_B = 0			300	
Emitter cut-off current	I_{EBO}	V_{EB}= 6V , I_C=0			0.1	mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=3 A, I_B=375 mA			1.2	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=3 A, I_B=375 mA			1.2	
Base - emitter voltage	V_{BE}	V_{CE}= 4V, I_C= 3 A			1.8	
DC current gain	h_{FE}	V_{CE}= 4V, I_C= 1 A	70		250	
		V_{CE}= 4V, I_C= 3 A	10			
Turn-ON Time	t_{on}	I_C = 1A, I_{B1} = 0.1A, I_{B2} = – 0.1A, V_{CC} = 50V		0.5		us
Storage Time	t_{stg}			2.5		
Fall Time	t_f			0.4		
Transition frequency	f_T	V_{CE}= 10V, I_C= 500mA,f=10MHz		30		MHz

■ Classification of $h_{fe(1)}$

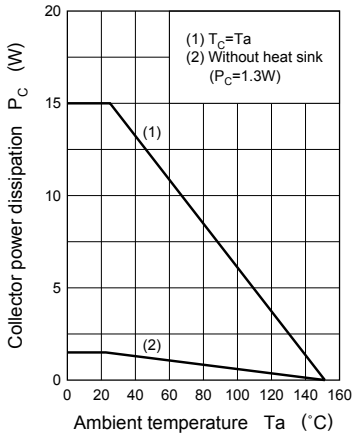
Type	2SD1742A-Q	2SD1742A-P
Range	70-150	120-250

NPN Transistors

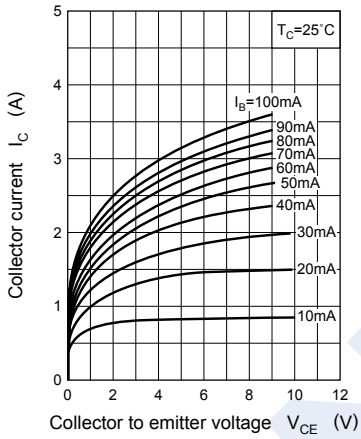
2SD1742A

■ Typical Characterisitics

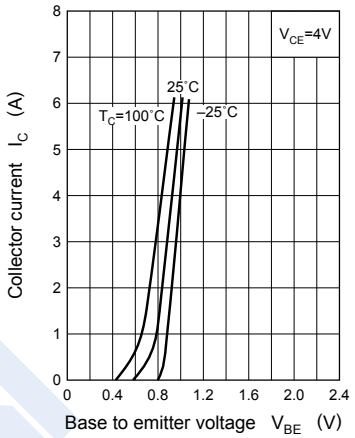
P_C — Ta



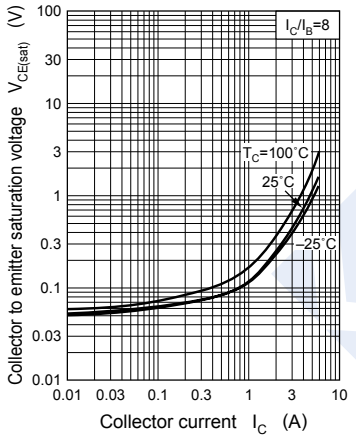
I_C — V_{CE}



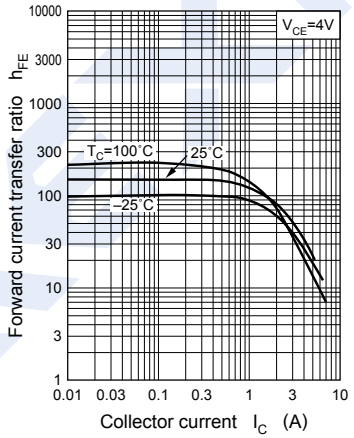
I_C — V_{BE}



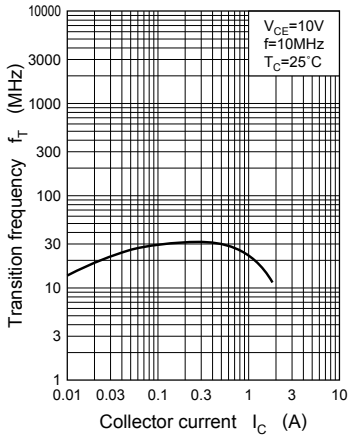
$V_{CE(sat)}$ — I_C



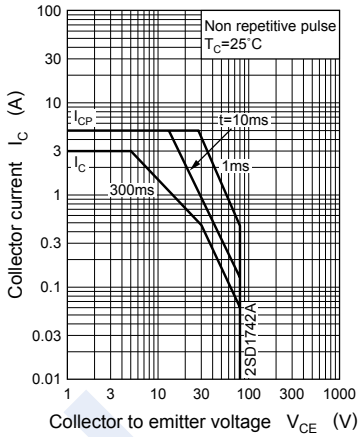
h_{FE} — I_C



f_T — I_C



Area of safe operation (ASO)



$R_{th(t)}$ — t

