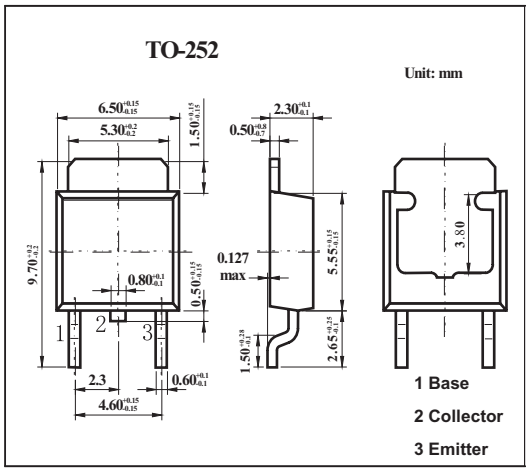
Silicon NPN Triple Diffusion Planar Type

2SD1253,2SD1253A



■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity.
- Low collector to emitter saturation voltage $V_{CE(sat)}$.

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Collector-base voltage	2SD1253	V_{CBO}	60	V
	2SD1253A		80	V
Collector-emitter voltage	2SD1253	V_{CEO}	60	V
	2SD1253A		80	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	4	A
Peak collector current		I_{CP}	8	A
Collector power dissipation Ta = 25℃		P_C	1.3	W
Tc = 25℃			40	
Junction temperature		T_j	150	℃
Storage temperature		T_{stg}	-55 to +150	℃

2SD1253,2SD1253A

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter voltage	2SD1253	V_{CEO}	I_C = 30 mA, I_B = 0	60			V
	2SD1253A			80			V
Base-emitter voltage		V_{BE}	V_{CE} = 4 V, I_C = 3 A			2	V
Collector-emitter cutoff current	2SD1253	I_{CES}	V_{CE} = 60 V, V_{BE} = 0			400	μA
	2SD1253A		V_{CE} = 80 V, V_{BE} = 0			400	μA
Collector-emitter cutoff current	2SD1253	I_{CEO}	V_{CE} = 30 V, I_B = 0			700	μA
	2SD1253A		V_{CE} = 60 V, I_B = 0			700	μA
Emitter-base cutoff current		I_{EBO}	V_{EB} = 5 V, I_C = 0			1	mA
Forward current transfer ratio		h_{FE}	V_{CE} = 4 V, I_C = 1 A	40		250	
Forward current transfer ratio			V_{CE} = 4 V, I_C = 3 A	15			
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C = 4 A, I_B = 0.4 A			1.5	V
Transition frequency		f_T	V_{CE} = 5 V, I_C = 0.5 A, f = 1 MHz		20		MHz
Turn-on time		ton	I_C=4A		0.4		μs
Storage time		tstg	I_{B1}=-I_{B2}=0.4 A		1.2		μs
Fall time		tf	V_{CC}=50V		0.5		μs

■ h_{FE} Classification

Rank	R	Q	P
h_{FE}	40～90	70～150	120～250