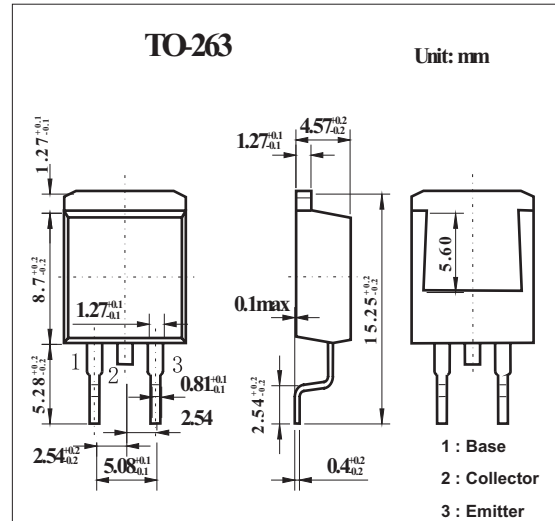


2SD2199

■ Features

- Surface mount type device making the following possible.
- Low collector-to-emitter saturation voltage.

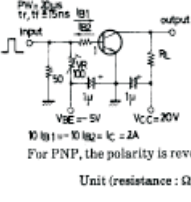


■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	60	V
Collector-emitter voltage	V _{CE0}	50	V
Emitter-base voltage	V _{EB0}	6	V
Collector current	I _C	7	A
Collector current (pulse)	I _{CP}	12	A
Collector dissipation	P _C	1.65	W
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

2SD2199

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	V _{CB} = 40V , I _E = 0			0.1	mA	
Emitter cutoff current	IEBO	V _{EB} = 4V , I _C = 0			0.1	mA	
DC current Gain	hFE	V _{CE} = 2V , I _C = 1A	70		280		
		V _{CE} = 2V , I _C = 5A	30				
Gain bandwidth product	f _T	V _{CE} = 5V , I _C = 1A		10		MHz	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 4A , I _B = 0.4A			0.4	V	
Collector-to-base breakdown voltage	V _{(BR)CBO}	I _C = 1mA , I _E = 0	60			V	
Collector-to-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA , R _{BE} = ∞	50			V	
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 1mA , I _C = 0	6			V	
Turn-on time	t _{on}	 <p> PIV, tr, tr, tff, tns Input output R_b R_e R_L V_{BE} V_{CE} V_{CC} I_B I_C I_E 10 I_B = 10 I_C = I_E = 2A For PNP, the polarity is reversed. Unit (resistance : Ω, capacitance : F) </p>		0.2		μs	
Storage time	t _{stg}				0.3		μs
Fall time	t _f				0.9		μs

■ hFE Classification

Rank	Q	R	S
hFE	70~140	100~200	140~280