

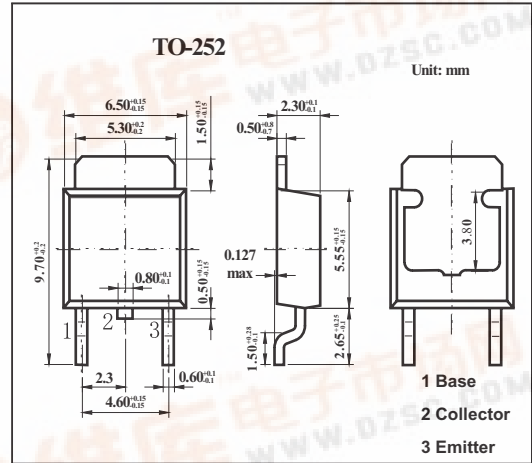
SMD Type Transistors

High-Current Switching Applications

2SD1815

■ Features

- Low collector-to-emitter saturation voltage.
- Excellent linearity of hFE.
- High fT.
- Fast switching time.

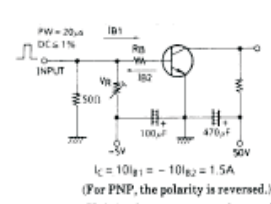


■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	VCBO	120	V
Collector-emitter voltage	VCEO	100	V
Emitter-base voltage	VEBO	6	V
Collector current	IC	3	A
Collector current (pulse)	ICP	6	A
Collector dissipation	PC	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

2SD1815

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	V _{CB} = 100V , I _E = 0			1	μA	
Emitter cutoff current	IEBO	V _{EB} = 4V , I _C = 0			1	μA	
DC current Gain	h _{FE}	V _{CE} = 5V , I _C = 0.5A	70		400		
		V _{CE} = 5V , I _C = 2A	40				
Gain bandwidth product	f _T	V _{CE} = 10V , I _C = 0.5A		180		MHz	
Output capacitance	C _{ob}	V _{CB} = 10V , f = 1MHz		25		pF	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 1.5A , I _B = 0.15A		150	400	mV	
Base-to-emitter saturation voltage	V _{BE(sat)}	I _C = 1.5A , I _B = 0.15A		0.9	1.2	V	
Collector-to-base breakdown voltage	V _{(BR)CBO}	I _C = 10μA , I _E = 0	120			V	
Collector-to-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA , R _{BE} = ∞	100			V	
Emitter-to-base breakdown voltage	V _{(BR)EBO}	I _E = 10μA , I _C = 0	6			V	
Turn-on time	t _{on}	 <p> $I_C = 10I_{B1} = -10I_{B2} = 1.5A$ (For PNP, the polarity is reversed.) Unit (resistance : Ω, capacitance : F) </p>		100		ns	
Storage time	t _{stg}				900		ns
Fall time	t _f				50		ns

■ hFE Classification

Rank	Q	R	S	T
hFE	70~140	100~200	140~280	200~400