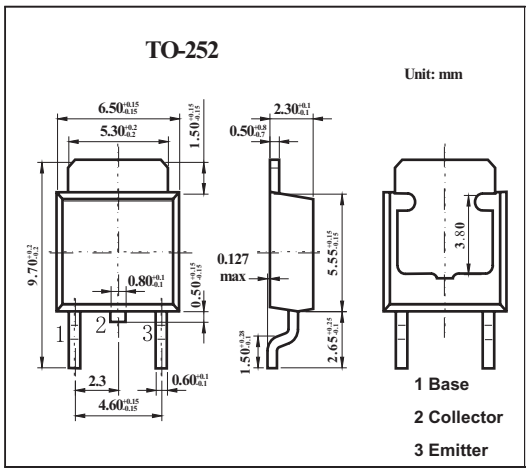
High-Current Switching Applications

2SD1815



Features

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

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	100	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	3	A
Collector current (pulse)	I_{CP}	6	A
Collector dissipation	P_C	1	W
Jumction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

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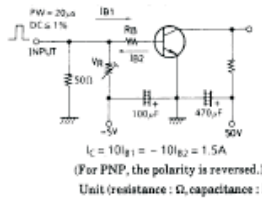
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 100V , I_E = 0			1	μA
Emitter cutoff current	I_{EBO}	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}			100		ns
Storage time	t_{stg}			900		ns
Fall time	t_f			50		ns

$I_C = 10I_{B1} = -10I_{B2} = 1.5A$

(For PNP, the polarity is reversed.)

Unit (resistance : Ω, capacitance : F)

■ h_{FE} Classification

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