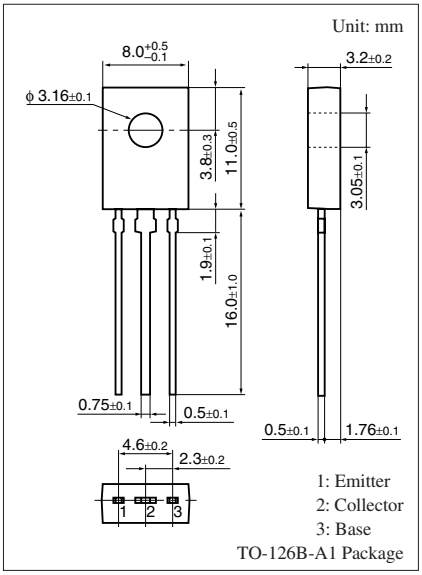
2SD2018

Silicon NPN epitaxial planar type

For low-frequency amplification



■ Features

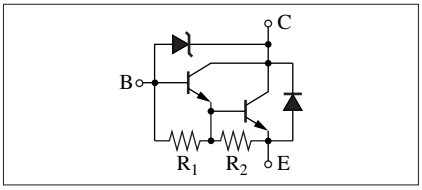
- High forward current transfer ratio h_{FE}
- Built-in 60 V Zener diode between base to collector
- Darlington connection

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector to base voltage		V_{CBO}	60^{+25}_{-10}	V
Collector to emitter voltage		V_{CEO}	60^{+25}_{-10}	V
Emitter to base voltage		V_{EBO}	5	V
Collector current		I_C	1	A
Peak collector current		I_{CP}	1.5	A
Collector power dissipation	$T_C = 25°C$	P_C	1.2	W
	$T_a = 25°C$ *		5.0	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

Note) ∗ With a 100 × 100 × 2 mm Al heat sink

Internal Connection

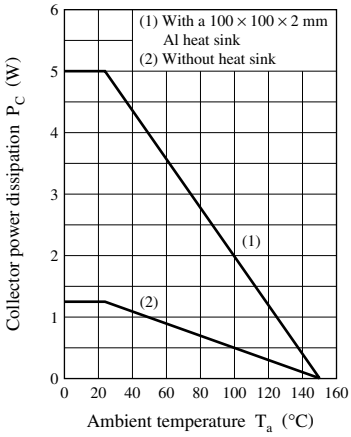


■ Electrical Characteristics $T_C = 25°C \pm 3°C$

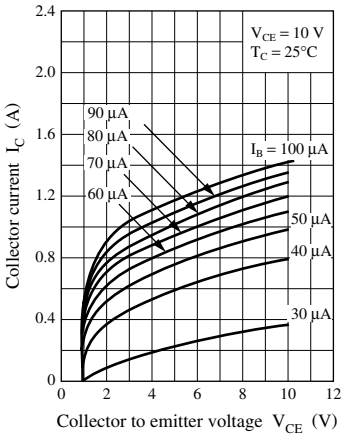
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector to base voltage	V_{CBO}	$I_C = 100\ \mu A$, $I_E = 0$	50		85	V
Collector to emitter voltage	V_{CEO}	$I_C = 1$ mA, $I_B = 0$	50		85	V
Collector cutoff current	I_{CBO}	$V_{CB} = 25$ V, $I_E = 0$			1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 4$ V, $I_C = 0$			2	mA
DC current gain *	h_{FE}	$V_{CE} = 10$ V, $I_C = 1.0$ A	6500		40000	
Collector to emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 1.0$ A, $I_B = 1.0$ mA			1.8	V
Base to emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 1.0$ A, $I_B = 1.0$ mA			2.2	V

Note) ∗ Pulse measurement

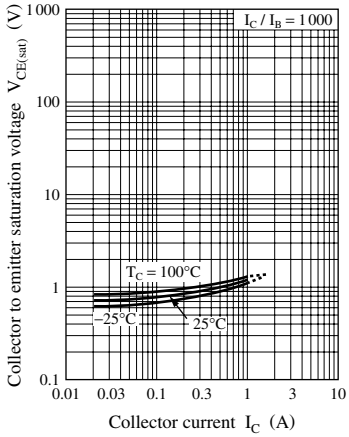
P_C — T_a



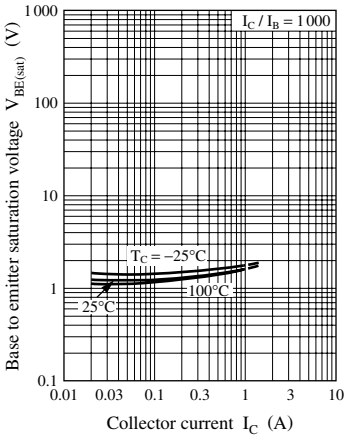
I_C — V_{CE}



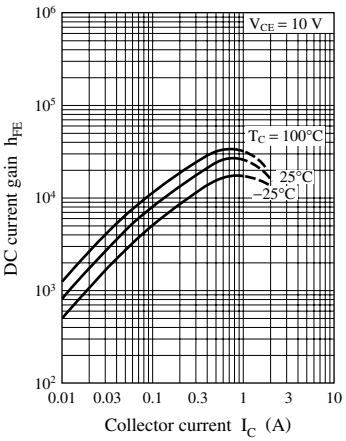
$V_{CE(sat)}$ — I_C



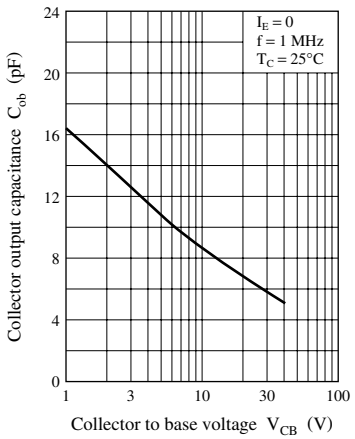
$V_{BE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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