2SD1261, 2SD1261A

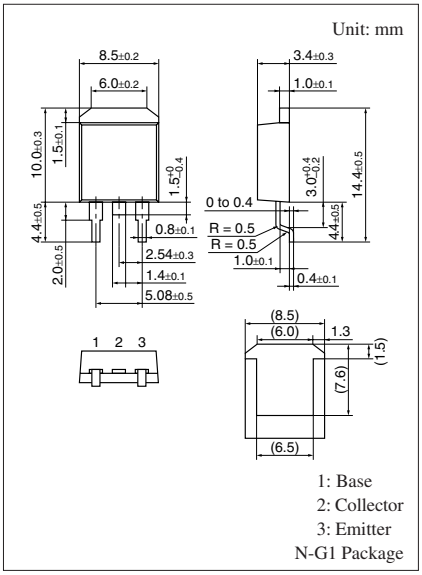
Silicon NPN triple diffusion planar type darlington

For power amplification

Complementary to 2SB0938, 2SB0938A

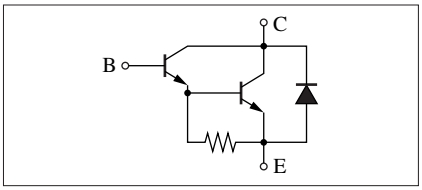
■ Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.



Note) Self-supported type package is also prepared

Internal Connection



■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SD1261	V_{CBO}	60	V
	2SD1261A		80	
Collector-emitter voltage (Base open)	2SD1261	V_{CEO}	60	V
	2SD1261A		80	
Emitter-base voltage (Collector open)		V_{EBO}	5	V
Collector current		I_C	4	A
Peak collector current		I_{CP}	8	A
Collector power dissipation		P_C	40	W
	$T_a = 25°C$		1.3	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

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

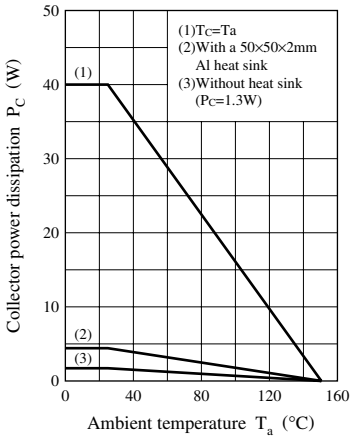
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1261	V_{CEO}	I_C = 30 mA, I_B = 0	60			V
	2SD1261A			80			
Base-emitter voltage		V_{BE}	V_{CE} = 3 V, I_C = 3 A			2.5	V
Collector-base cutoff current (Emitter open)	2SD1261	I_{CBO}	V_{CB} = 60 V, I_E = 0			200	μA
	2SD1261A		V_{CB} = 80 V, I_E = 0			200	
Collector-emitter cutoff current (Base open)	2SD1261	I_{CEO}	V_{CE} = 30 V, I_B = 0			500	μA
	2SD1261A		V_{CE} = 40 V, I_B = 0			500	
Emitter-base cutoff current (Collector open)		I_{EBO}	V_{EB} = 5 V, I_C = 0			2	mA
Forward current transfer ratio		h_{FE1}	V_{CE} = 3 V, I_C = 0.5 A	1000			—
		h_{FE2} *	V_{CE} = 3 V, I_C = 3 A	1000		10000	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C = 3 A, I_B = 12 mA			2.0	V
			I_C = 5 A, I_B = 20 mA			4.0	V
Transition frequency		f_T	V_{CE} = 10 V, I_C = 0.5 A, f = 1 MHz		20		MHz
Turn-on time		t_{on}	I_C = 3 A		0.5		μs
Strage time		t_{stg}	I_{B1} = 12 mA, I_{B2} = −12 mA		4.0		μs
Fall time		t_f	V_{CC} = 50 V		1.0		μs

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

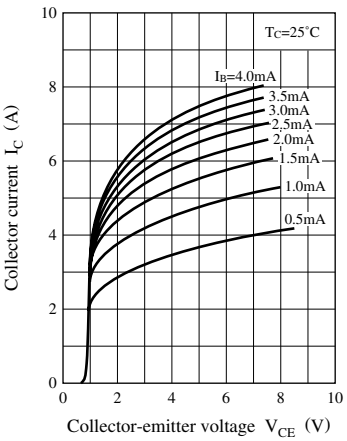
2. *: Rank classification

Rank	R	Q	P
h_{FE2}	1000 to 2500	2000 to 5000	4000 to 10000

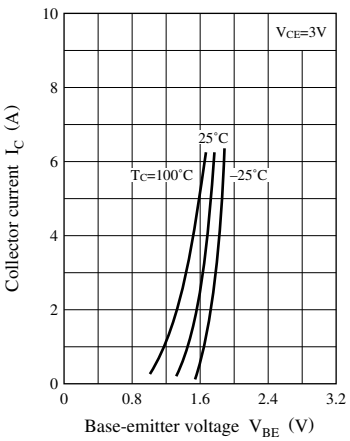
P_C — T_a



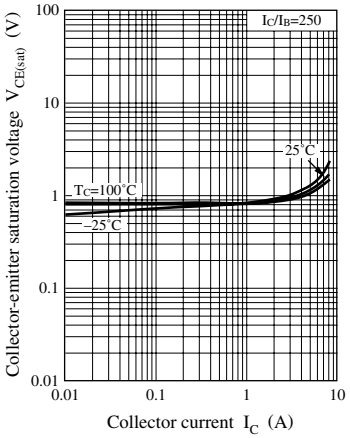
I_C — V_{CE}



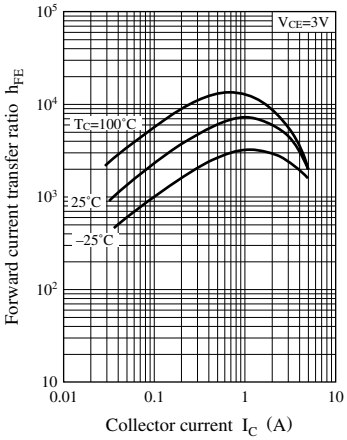
I_C — V_{BE}



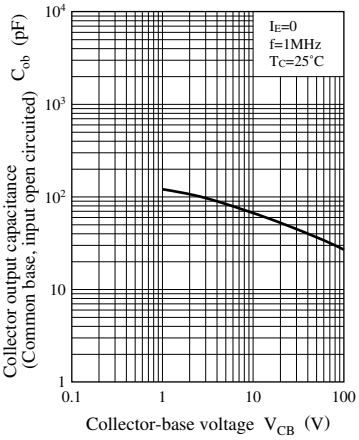
$V_{CE(sat)}$ — I_C



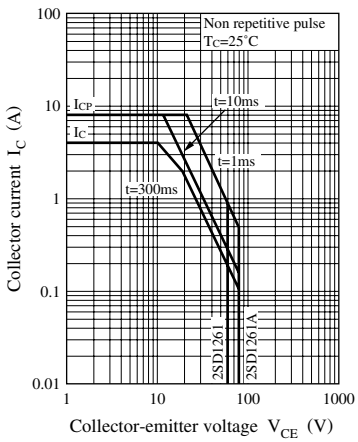
h_{FE} — I_C



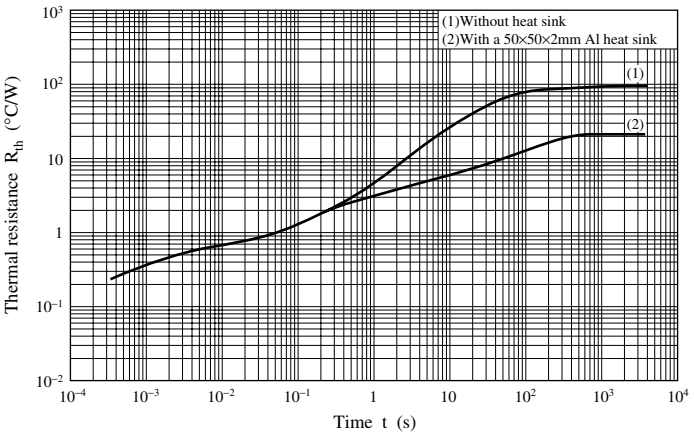
C_{ob} — V_{CB}



Safe operation area



R_{th} — t



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(2) The technical information described in this material is limited to showing representative characteristics and applied circuits examples of the products. It neither warrants non-infringement of intellectual property right or any other rights owned by our company or a third party, nor grants any license.

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