2SD0638 (2SD638)

Silicon NPN epitaxial planar type

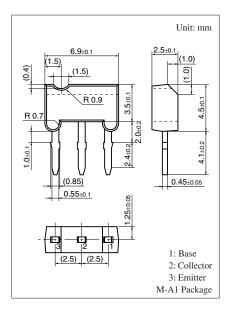
For medium-power general amplification Complementary to 2SB0643 (2SB643)

■ Features

- Low collector-emitter saturation voltage V_{CE(sat)}
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CBO}	30	V
Collector-emitter voltage (Base open)	V _{CEO}	25	V
Emitter-base voltage (Collector open)	V_{EBO}	7	V
Collector current	I_{C}	0.5	A
Peak collector current	I_{CP}	1	A
Collector power dissipation *	P _C	600	mW
Junction temperature	T_{j}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C



■ Electrical Characteristics $T_a = 25$ °C ± 3 °C

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_C = 10 \mu\text{A}, I_E = 0$	30			V
Collector-emitter voltage (Base open)	V _{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	25			V
Emitter-base voltage (Collector open)	V _{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$	7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 20 \text{ V}, I_{E} = 0$			0.1	μΑ
Base-emitter saturation voltage	I_{CEO}	$V_{CE} = 20 \text{ V}, I_{B} = 0$			1	μΑ
Forward current transfer ratio	h _{FE1} *	$V_{CE} = 10 \text{ V}, I_{C} = 10 \text{ mA}$	85		340	_
	h _{FE2}	V _{CE} = 10 V, I _C = 500 mA	40	90		
Collector-emitter saturation voltage	V _{CE(sat)}	$I_C = 300 \text{ mA}, I_B = 30 \text{ mA}$		0.35	0.6	V
Transition frequency	f_T	$V_{CB} = 10 \text{ V}, I_{E} = -50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance	C _{ob}	$V_{CB} = 10 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$		6	15	pF
(Common base, input open circuited)						

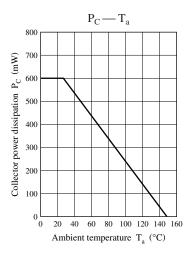
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

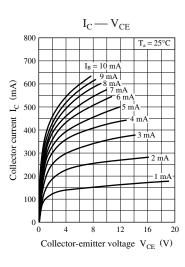
2. *: Rank classification

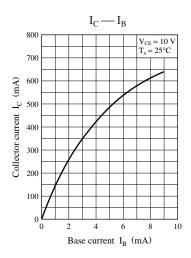
Rank	Q	R	S
h _{FE1}	85 to 170	120 to 240	170 to 340

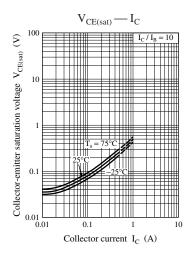
Note) The part number in the parenthesis shows conventional part number.

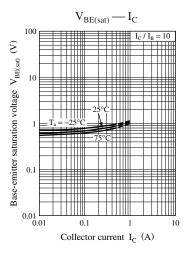
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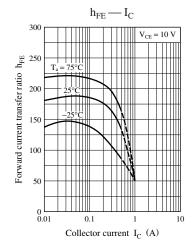


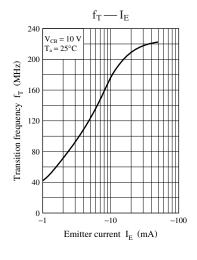


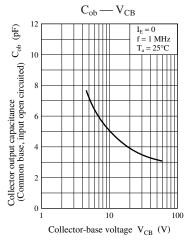


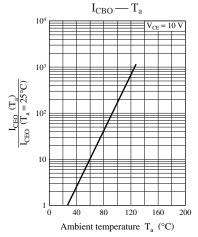












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