2SD2178

Silicon NPN epitaxial planar type

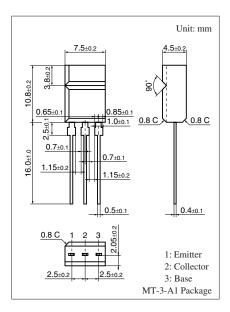
For low-frequency output amplification

Features

- \bullet Low collector-emitter saturation voltage $V_{\mbox{CE(sat)}}$
- \bullet Large collector current I_{C}

Absolute Maximum Ratings $T_a = 25^{\circ}C$

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V _{CBO}	50	V	
Collector-emitter voltage (Base open)	V _{CEO}	50	V	
Emitter-base voltage (Collector open)	V _{EBO}	5	V	
Collector current	I _C	2	А	
Peak collector current	I _{CP}	3	А	
Collector power dissipation	P _C	1.5	W	
Junction temperature	Tj	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	



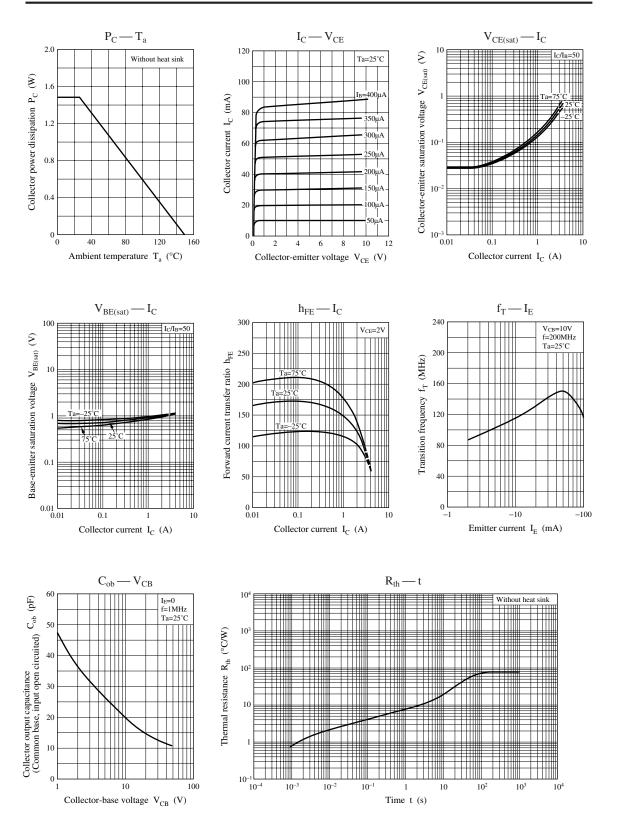
Electrical Characteristics $T_a = 25^{\circ}C \pm 3^{\circ}C$

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_{\rm C} = 10 \ \mu A, \ I_{\rm E} = 0$	50			V
Collector-emitter voltage (Base open)	V _{CEO}	$I_{\rm C} = 1 \text{ mA}, I_{\rm B} = 0$	50			V
Emitter-base voltage (Collector open)	V _{EBO}	$I_E = 10 \ \mu A, I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	I _{CBO}	$V_{CB} = 20 V, I_E = 0$			0.1	μΑ
Forward current transfer ratio	h _{FE1} *	$V_{CE} = 2 V, I_C = 200 mA$	120		340	_
	h _{FE2}	$V_{CE} = 2 V, I_C = 1 A$	80			
Collector-emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 1 \text{ A}, I_{\rm B} = 50 \text{ mA}$		0.15	0.30	V
Base-emitter saturation voltage	V _{BE(sat)}	$I_{\rm C} = 1 \text{ A}, I_{\rm B} = 50 \text{ mA}$		0.9	1.2	V
Transition frequency	f _T	$V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		150		MHz
Collector output capacitance	C _{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		23	35	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	R	S	
h _{FE1}	120 to 240	240 170 to 340	

Panasonic



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