

DMG56306

Silicon NPN epitaxial planar type (Tr1)
Silicon PNP epitaxial planar type (Tr2)

For digital circuits

■ Features

- High forward current transfer ratio h_{FE} with excellent linearity
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

■ Basic Part Number

DRC2143T + DRA2143T (Collector-base connection)

■ Packaging

Embossed type (Thermo-compression sealing): 3000 pcs / reel (standard)

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

Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	50	V
	Collector-emitter voltage (Base open)	V_{CEO}	50	V
	Collector current	I_C	100	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	-50	V
	Collector-emitter voltage (Base open)	V_{CEO}	-50	V
	Collector current	I_C	-100	mA
Overall	Total power dissipation	P_T	150	mW
	Junction temperature	T_j	150	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

- Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 2 \text{mA}, I_B = 0$	50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 50 \text{V}, I_E = 0$			0.1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 50 \text{V}, I_B = 0$			0.5	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 6 \text{V}, I_C = 0$			0.01	mA
Forward current transfer ratio	h_{FE}	$V_{CE} = 10 \text{V}, I_C = 5 \text{mA}$	160		460	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{mA}, I_B = 0.5 \text{mA}$			0.25	V
Input voltage (ON)	$V_{I(on)}$	$V_{CE} = 0.2 \text{V}, I_C = 5 \text{mA}$	1.0			V
Input voltage (OFF)	$V_{I(off)}$	$V_{CE} = 5 \text{V}, I_C = 100 \mu\text{A}$			0.4	V
Input resistance	R_1		-30%	4.7	+30%	k Ω

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

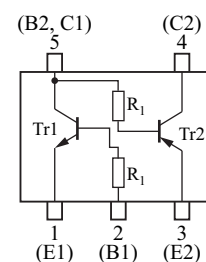
■ Package

- Code
SMini5-F3-B
- Pin Name

1: Emitter (Tr1)	4: Collector (Tr2)
2: Base (Tr1)	5: Base (Tr2)
3: Emitter (Tr2)	Collector (Tr1)

■ Marking Symbol: L6

■ Internal Connection



Resistance value	Tr1	R_1	4.7	k Ω
		Tr2	R_1	4.7

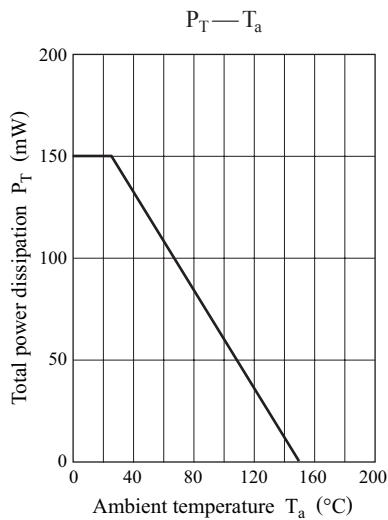
■ Electrical Characteristics (Continued) $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

• Tr2

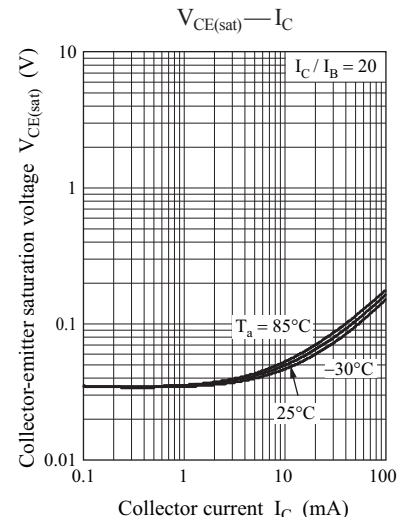
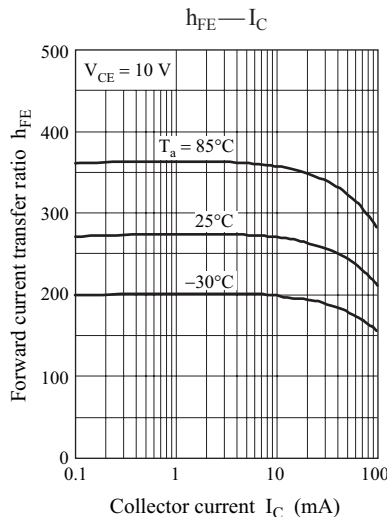
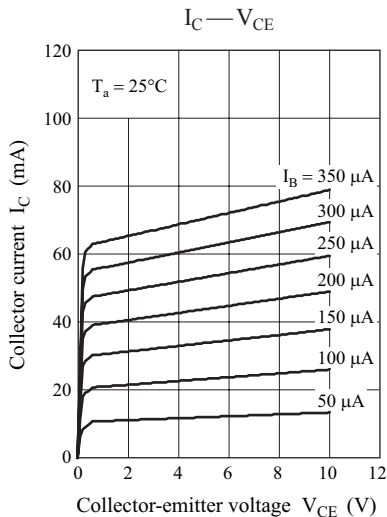
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_{\text{C}} = -10 \mu\text{A}, I_{\text{E}} = 0$	-50			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_{\text{C}} = -2 \text{ mA}, I_{\text{B}} = 0$	-50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{\text{CB}} = -50 \text{ V}, I_{\text{E}} = 0$			-0.1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{\text{CE}} = -50 \text{ V}, I_{\text{B}} = 0$			-0.5	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{\text{EB}} = -6 \text{ V}, I_{\text{C}} = 0$			-0.01	mA
Forward current transfer ratio	h_{FE}	$V_{\text{CE}} = -10 \text{ V}, I_{\text{C}} = -5 \text{ mA}$	160		460	—
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = -10 \text{ mA}, I_{\text{B}} = -0.5 \text{ mA}$			-0.25	V
Input voltage (ON)	$V_{\text{I(on)}}$	$V_{\text{CE}} = -0.2 \text{ V}, I_{\text{C}} = -5 \text{ mA}$	-1.0			V
Input voltage (OFF)	$V_{\text{I(off)}}$	$V_{\text{CE}} = -5 \text{ V}, I_{\text{C}} = -100 \mu\text{A}$			-0.4	V
Input resistance	R_{I}		-30%	4.7	+30%	$\text{k}\Omega$

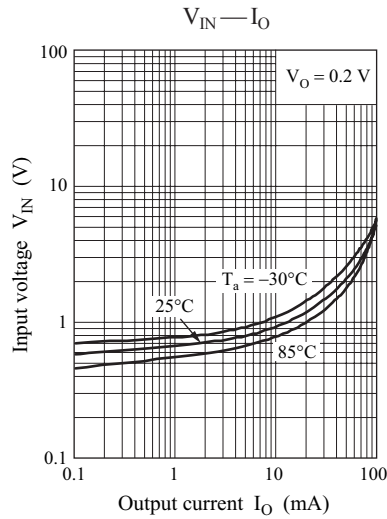
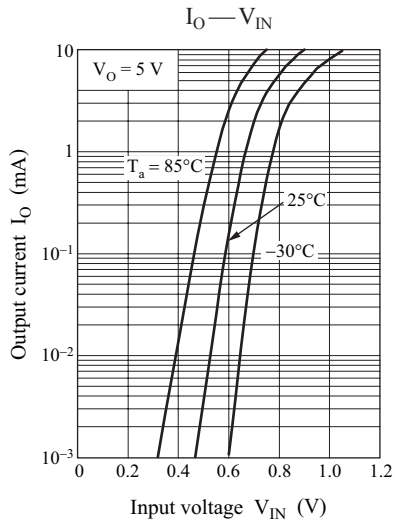
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Common characteristics chart

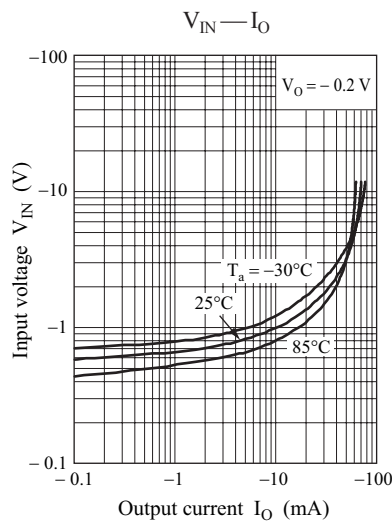
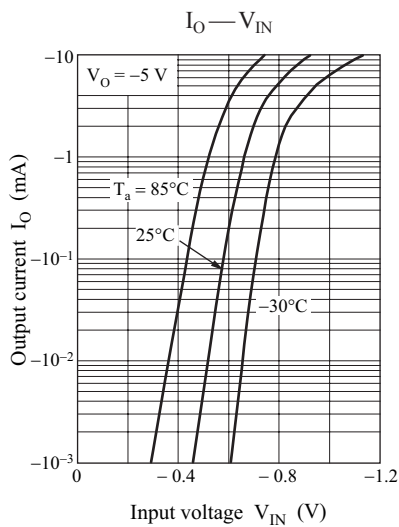
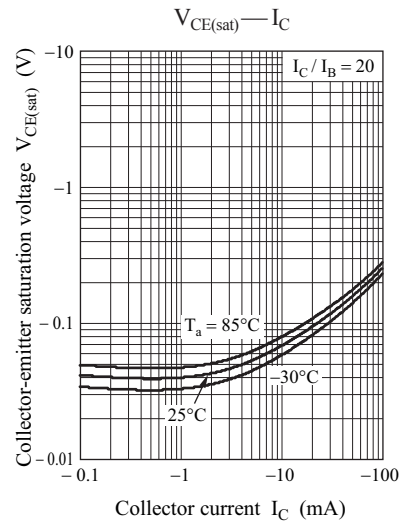
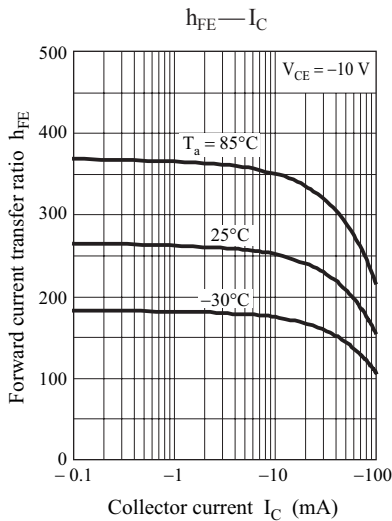
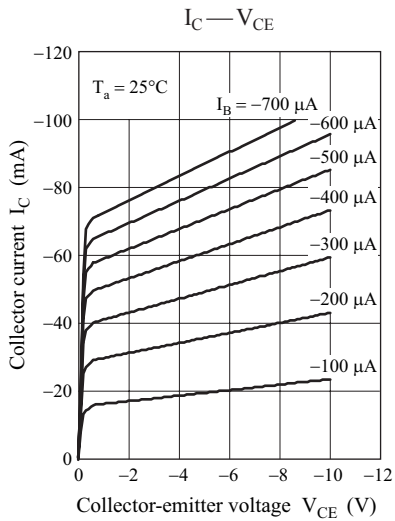


Characteristics charts of Tr1





Characteristics charts of Tr2



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