DME914C1

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

For digital circuits

■ Features

- High forward current transfer ratio h_{FE}
- 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

DSA9402 + DRA2143Z (Individual)

■ Packaging

DME914C10R Embossed type (Thermo-compression sealing): 8000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	–15	V
	Collector-emitter voltage (Base open)	V_{CEO}	–12	V
	Emitter-base voltage (Collector open)	V_{EBO}	–5	V
	Collector current	I_C	–500	mA
	Peak collector current	I_{CP}	–1	A
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	125	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{stg}	–55 to +150	°C

■ Package

- Code

  SSMini6-F3-B

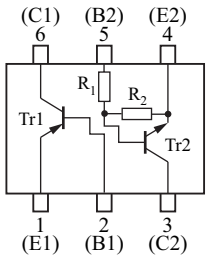
  Package dimension clicks here.→ Click!

- Pin Name

  1: Emitter (Tr1) 4: Emitter (Tr2)
  2: Base (Tr1) 5: Base (Tr2)
  3: Collector (Tr2) 6: Collector (Tr1)

■ Marking Symbol: T5

■ Internal Connection



Resistance value	Tr2	R_1	4.7	kΩ
		R_2	47	

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

• Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = –10 µA, I_E = 0	–15			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = –1 mA, I_B = 0	–12			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = –10 µA, I_C = 0	–5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = –10 V, I_E = 0			– 0.1	µA
Forward current transfer ratio	h_{FE}	V_{CE} = –2 V, I_C = –10 mA	270		680	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = –200 mA, I_B = –10 mA			–250	mV
Transition frequency	f_T	V_{CE} = –2 V, I_C = –10 mA		300		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = –10 V, I_E = 0, f = 1 MHz		4.0		pF

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

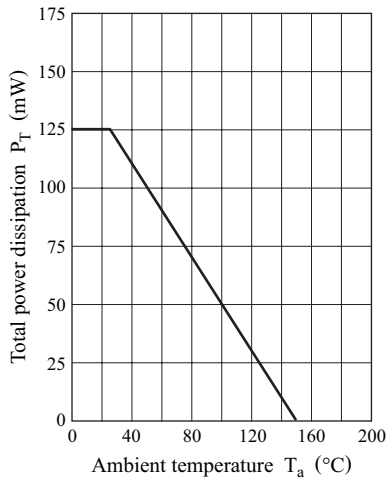
• Tr2

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 µA, I_E = 0	50			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 2 mA, I_B = 0	50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 50 V, I_E = 0			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 50 V, I_B = 0			0.5	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 6 V, I_C = 0			0.2	mA
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 5 mA	80		400	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 10 mA, I_B = 0.5 mA			0.25	V
Input voltage (ON)	$V_{I(on)}$	V_{CE} = 0.2 V, I_C = 5 mA	1.3			V
Input voltage (OFF)	$V_{I(off)}$	V_{CE} = 5 V, I_C = 100 µA			0.4	V
Input resistance	R_1		–30%	4.7	+30%	kΩ
Resistance ratio	R_1 / R_2		0.08	0.10	0.12	—

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

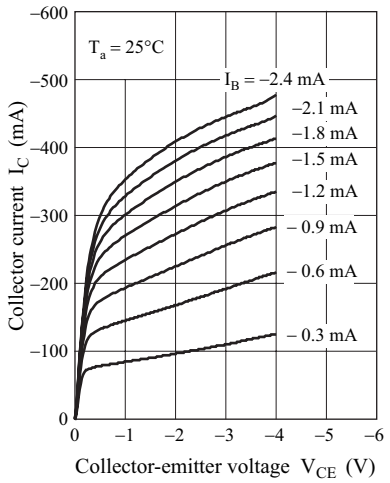
Common characteristics chart

P_T — T_a

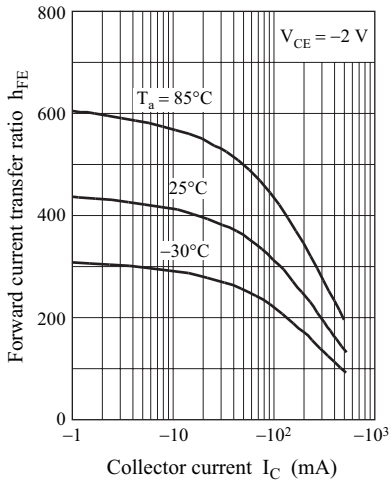


Characteristics charts of Tr1

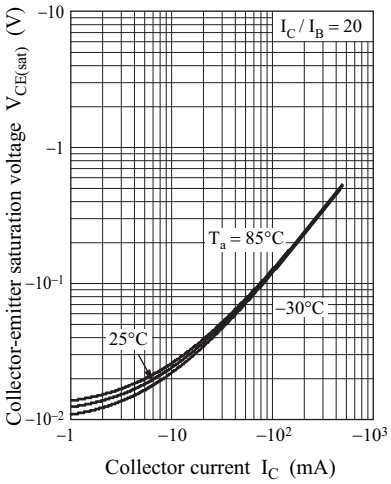
I_C — V_{CE}



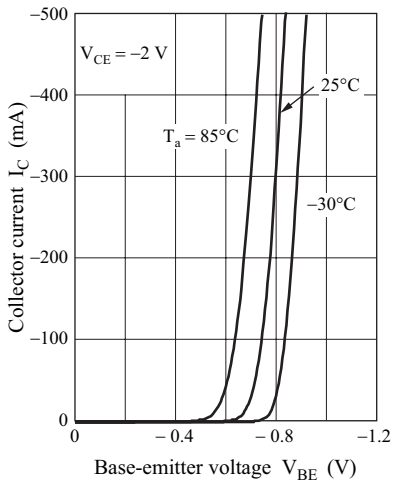
h_{FE} — I_C



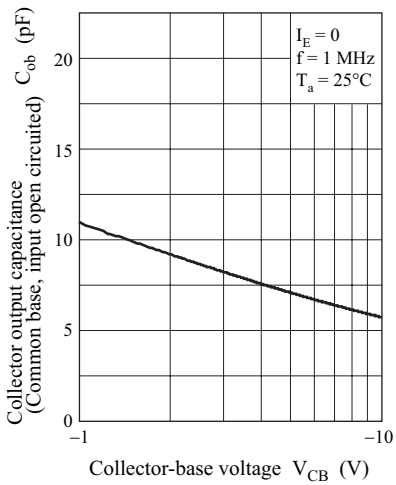
$V_{CE(sat)}$ — I_C



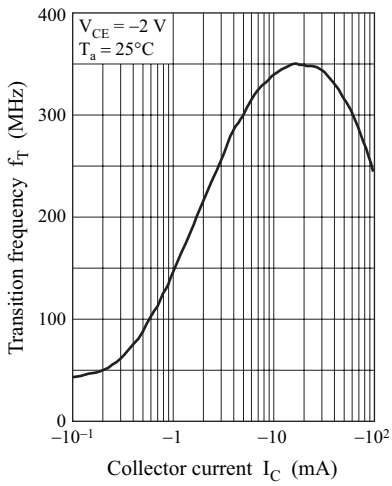
I_C — V_{BE}



C_{ob} — V_{CB}

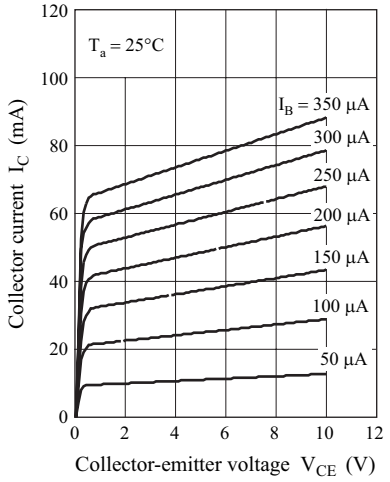


f_T — I_C

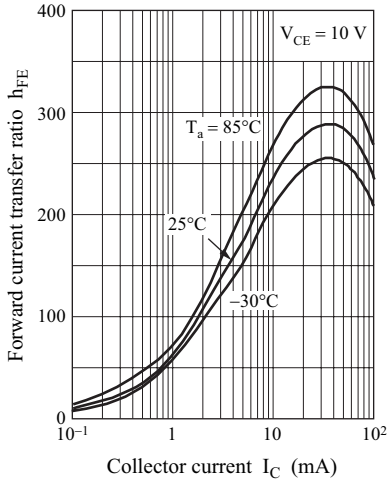


Characteristics charts of Tr2

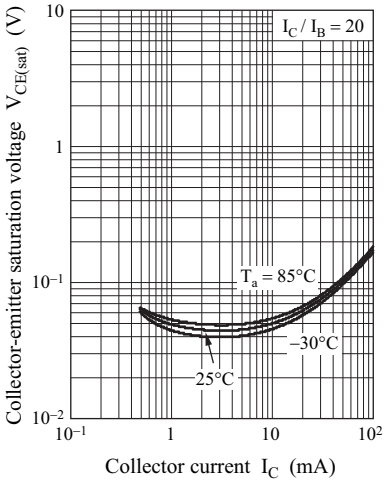
I_C — V_{CE}



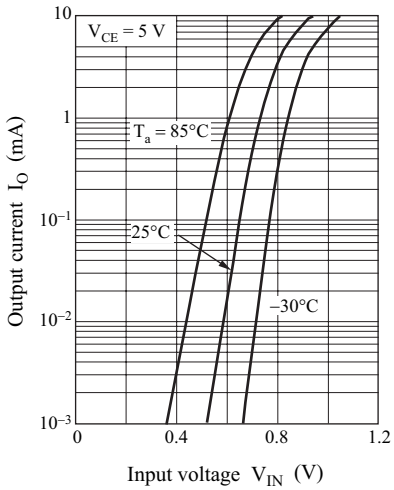
h_{FE} — I_C



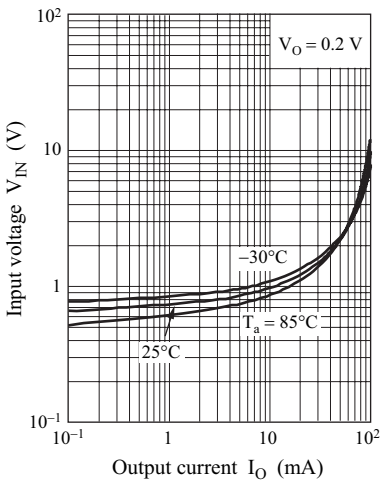
$V_{CE(sat)}$ — I_C



I_O — V_{IN}


10
1
10^{-1}
10^{-2}
10^{-3}
V_{CE} = 5 V
T_a = 85°C
25°C
−30°C
Output current I_O (mA)
0
0.4
0.8
1.2
Input voltage V_{IN} (V)

V_{IN} — I_O


10^2
10
1
10^{-1}
V_O = 0.2 V
−30°C
T_a = 85°C
25°C
Input voltage V_{IN} (V)
10^{-1}
1
10
10^2
Output current I_O (mA)

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