## **DMC5610E**

### Silicon NPN epitaxial planar type

For digital circuits
DMC2610E in SMini5 type package

#### ■ Features

- $\bullet$  Low collector-emitter saturation voltage  $V_{\text{CE}(\text{sat})}$
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

#### ■ Basic Part Number

Dual DRC2144W (Common emitter)

#### ■ Packaging

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

#### ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	50	V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	50	V
Collector current	I <sub>C</sub> 100		mA
Total power dissipation	P <sub>T</sub>	P <sub>T</sub> 150	
Junction temperature	$T_j$	T <sub>j</sub> 150	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

#### ■ Package

• Code

SMini5-F3-B

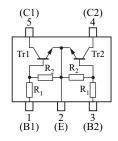
• Pin Name

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

3: Base (Tr2)

#### ■ Marking Symbol: R1

#### ■ Internal Connection



Resistance value	$R_1$	47	1-0
	$R_2$	22	KS 2

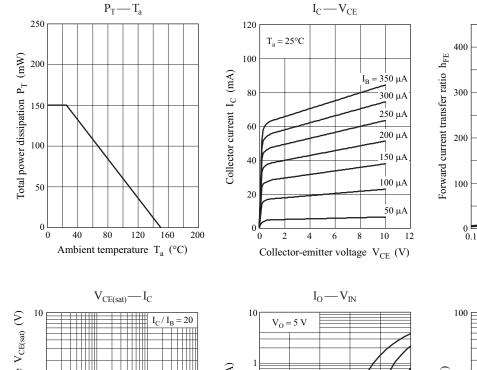
#### ■ Electrical Characteristics $T_a = 25$ °C±3°C

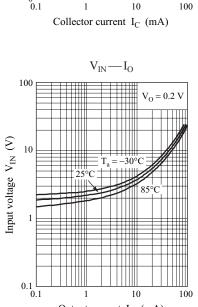
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_{\rm C} = 10 \mu{\rm A},  I_{\rm E} = 0$	50			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = 2 \text{ mA}, I_B = 0$	50			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 50 \text{ V}, I_{E} = 0$			0.1	μΑ
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 50 \text{ V}, I_{B} = 0$			0.5	μΑ
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 6 \text{ V}, I_C = 0$			0.2	mA
Forward current transfer ratio	$h_{\mathrm{FE}}$	$V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}$	60			_
h <sub>FE</sub> ratio *	h <sub>FE</sub> (Small/Large)	$V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}$	0.50	0.99		_
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	$I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$			0.25	V
Input voltage (ON)	V <sub>I(on)</sub>	$V_{CE} = 0.2 \text{ V}, I_{C} = 5 \text{ mA}$	4.4			V
Input voltage (OFF)	V <sub>I(off)</sub>	$V_{CE} = 5 \text{ V}, I_{C} = 100 \mu\text{A}$			1.2	V
Input resistance	$R_1$		-30%	47	+30%	kΩ
Resistance ratio	$R_1/R_2$		1.70	2.14	2.60	_

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

2. \*: Ratio between 2 elements

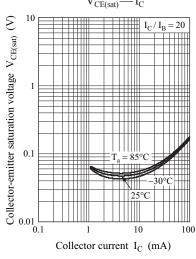
DMC5610E Panasonic

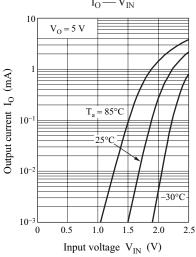




Output current IO (mA)

 $V_{CE} = 10 \text{ V}$ 

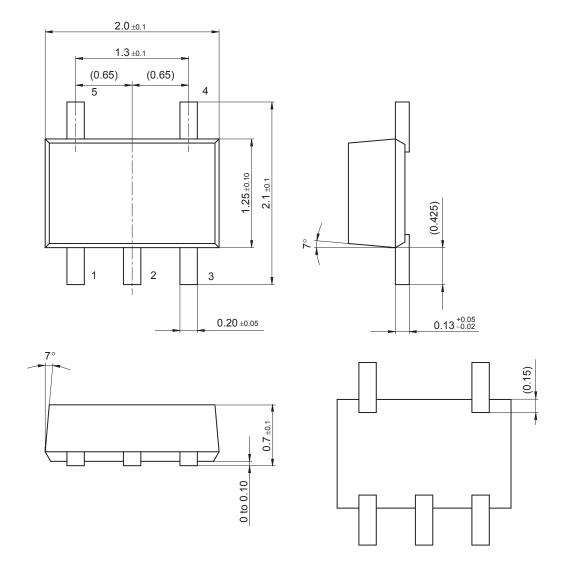




2 Ver. BED

### SMini5-F3-B

Unit: mm



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