

# DMS935E2

Silicon NPN epitaxial planar type (Tr)  
Silicon epitaxial planar type (CCD load device)

For CCD output circuits  
DSC2G03 + CCD load device (Individual)

## ■ Features

- Two elements incorporated into one package (Tr + CCD load device)
- High transition frequency  $f_T$
- Halogen-free / RoHS compliant  
(EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

## ■ Marking Symbol: X1

## ■ Packaging

DMS935E20R Embossed type (Thermo-compression sealing): 8 000 pcs / reel (standard)

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

Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	$V_{CBO}$	30	V
	Collector-emitter voltage (Base open)	$V_{CEO}$	20	V
	Emitter-base voltage (Collector open)	$V_{EBO}$	3	V
	Collector current	$I_C$	50	mA
CCD load device	Limiting element voltage	$V_{max}$	40	V
	Limiting element current	$I_{max}$	10	mA
Overall	Total power dissipation *1	$P_T$	125	mW
	Junction temperature	$T_j$	150	$^\circ\text{C}$
	Operating ambient temperature	$T_{opr}$	-40 to +85	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*1: Measuring on substrate at 17 mm × 10 mm × 1 mm

## ■ 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)	$V_{CBO}$	$I_C = 100 \mu\text{A}, I_E = 0$	30			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	3			V
Base-emitter voltage	$V_{BE}$	$V_{CE} = 10 \text{V}, I_C = 2 \text{mA}$		750		mV
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10 \text{V}, I_C = 2 \text{mA}$	100		250	—
Transition frequency *1	$f_T$	$V_{CE} = 10 \text{V}, I_C = 15 \text{mA}$		1 300		MHz

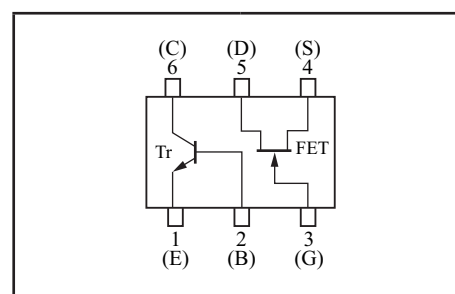
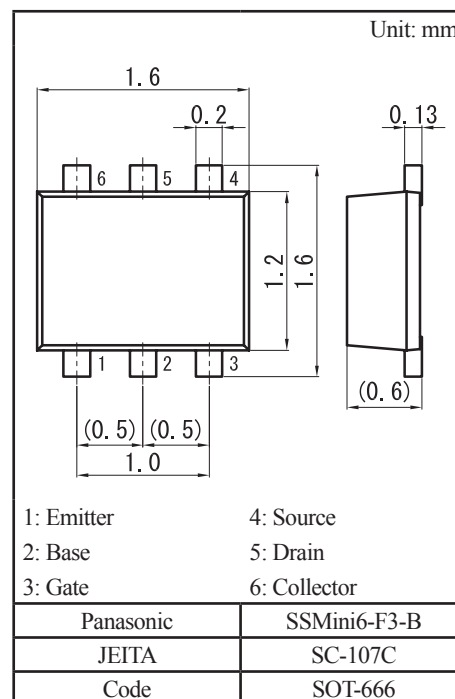
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Pulse measurement

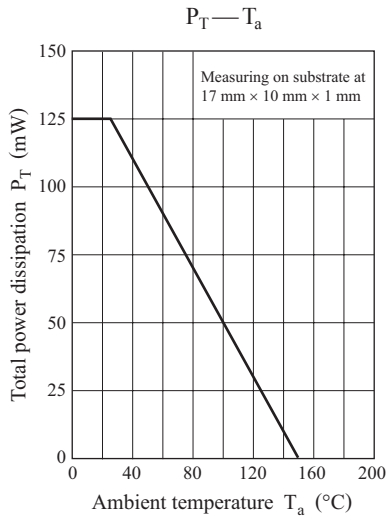
### • CCD load device

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Pinch off current	$I_P$	$V_{DS} = 8 \text{V}, V_G = 0$	5.0		7.0	mA
Output impedance	$Z_O$	$V_{DS} = 8 \text{V}, V_G = 0$		0.02		$\text{M}\Omega$

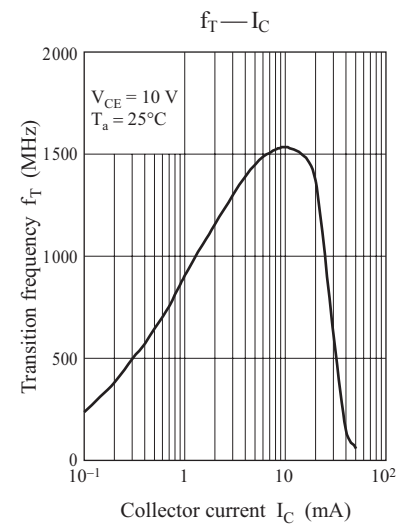
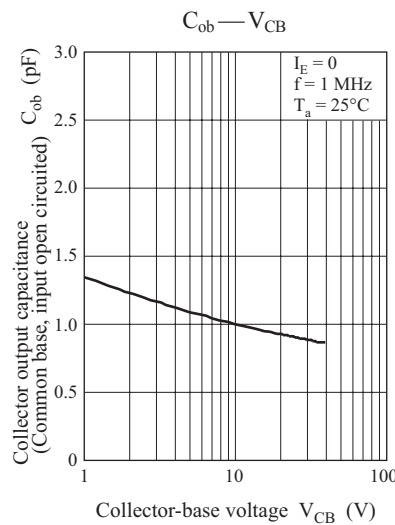
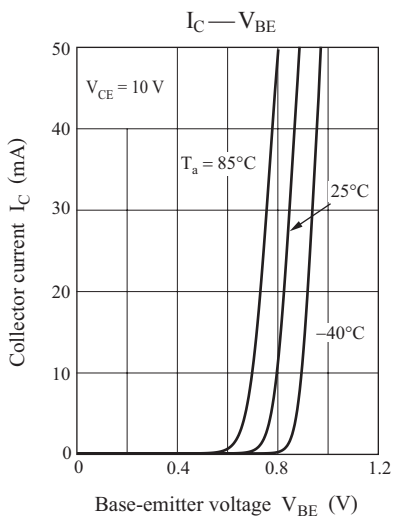
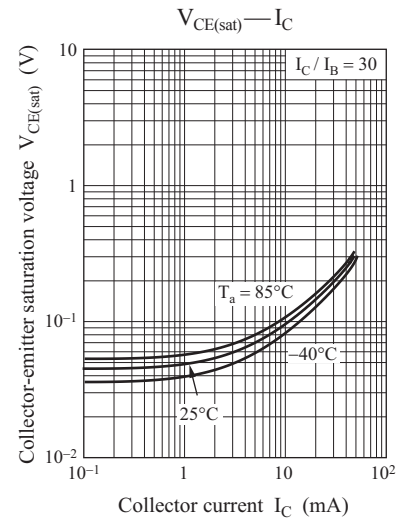
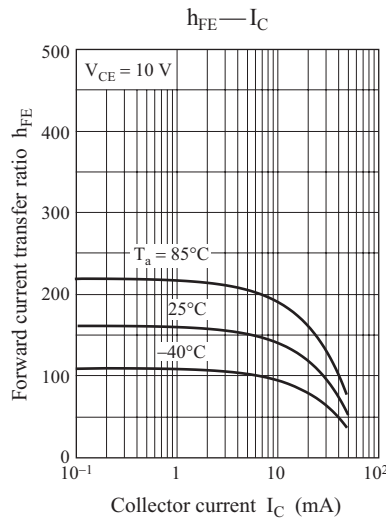
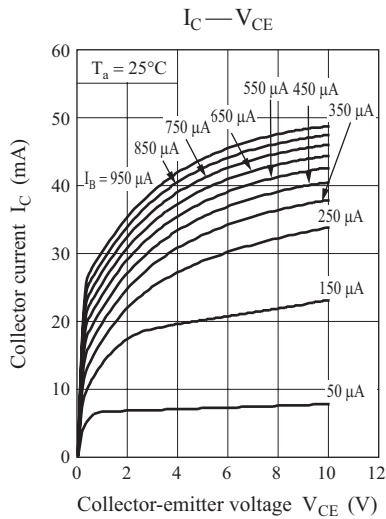
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



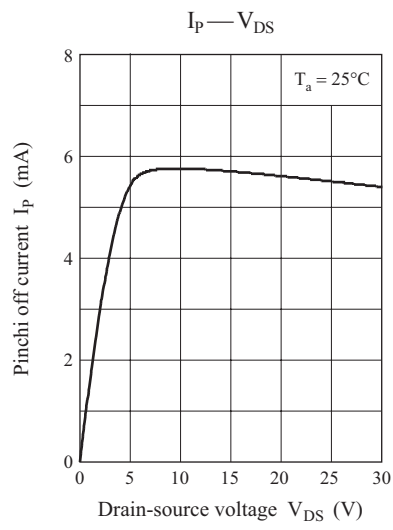
Common characteristics chart



Characteristics charts of Tr

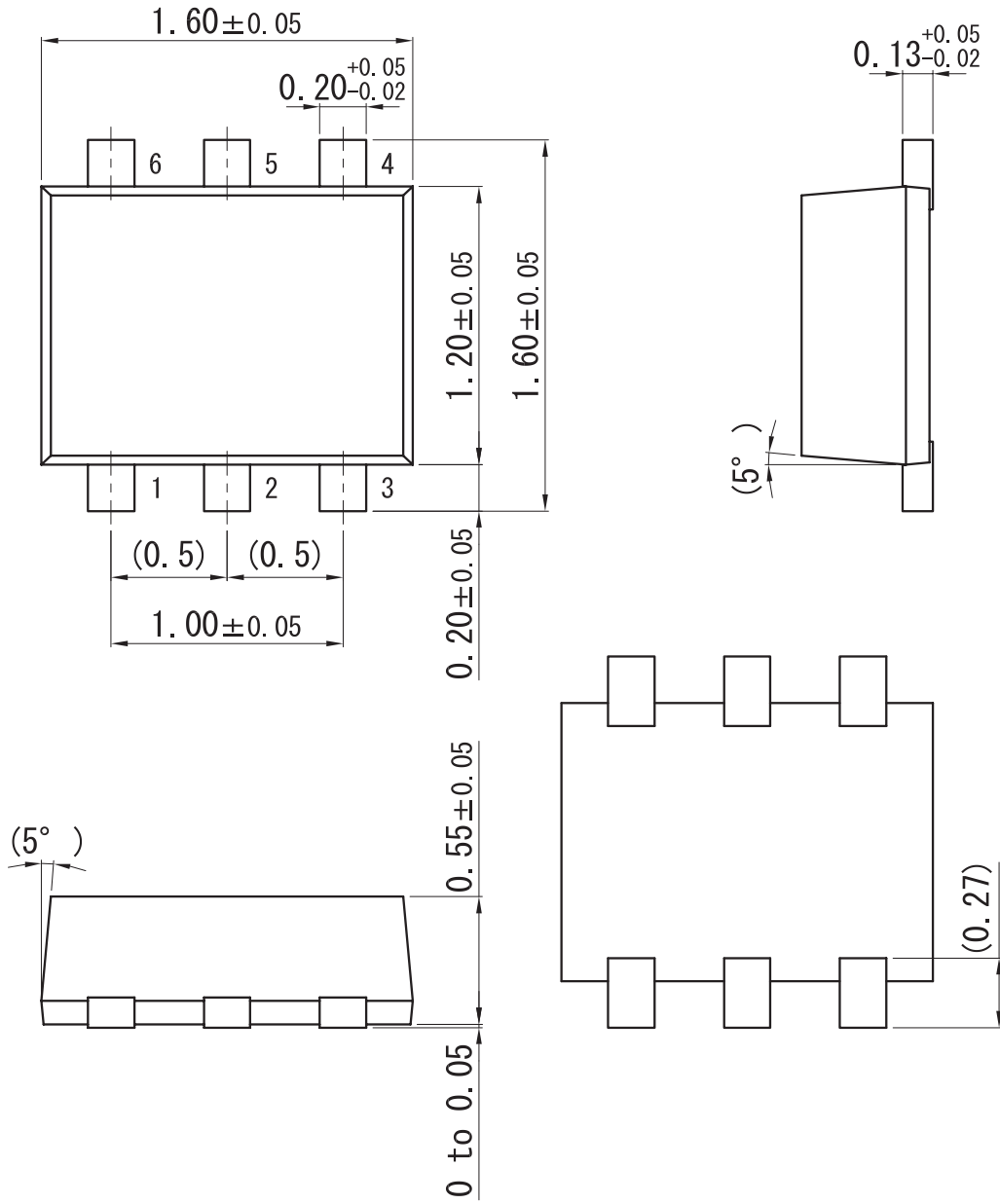


Characteristics charts of CCD

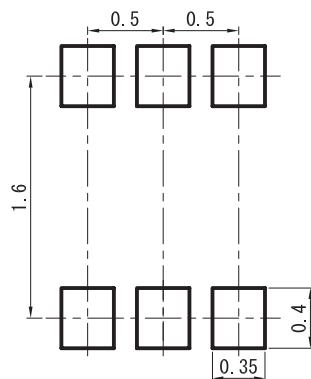


SSMini6-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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