UNR52A2G

Silicon NPN epitaxial planar type

For digital circuits

■ Features

- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- SMini type package allowing easy automatic insertion through tape packing

■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V _{CBO}	50	V	
Collector-emitter voltage (Base open)	V _{CEO}	50	V	
Collector current	I_{C}	80	mA	
Total power dissipation	P_{T}	150	mW	
Junction temperature	T _j	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	

■ Package

- Code
- SMini3-F2
- Pin Name
 - 1: Base
 - 2: Emitter
 - 3: Collector

■ Marking Symbol: FL

■ Internal Connection

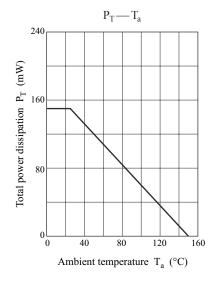
$$\begin{array}{c|c} R_1 & (22 & k\Omega) \\ B & & & \\ \hline R_2 & & \\ (22 & k\Omega) & & \\ \end{array} \qquad \begin{array}{c} C \\ \end{array}$$

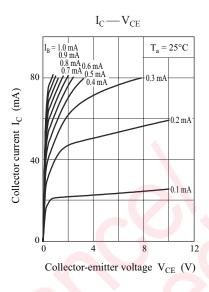
■ Electrical Characteristics T_a = 25°C±3°C

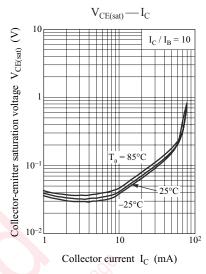
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_{\rm C} = 10 \mu \text{A}, I_{\rm E} = 0$	50			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 50 \text{ V}, I_{E} = 0$			0.1	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_{FE}	$V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}$	60			
Collector-emitter saturation voltage	V _{CE(sat)}	$I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$			0.25	V
Output voltage high-level	V _{OH}	$V_{CC} = 5 \text{ V}, V_{B} = 0.5 \text{ V}, R_{L} = 1 \text{ k}\Omega$	4.9			V
Output voltage low-level	V _{OL}	$V_{CC} = 5 \text{ V}, V_{B} = 2.5 \text{ V}, R_{L} = 1 \text{ k}\Omega$			0.2	V
Input resistance	R_1		-30%	22	+30%	kΩ
Resistance ratio	R_1/R_2		0.8	1.0	1.2	_
Transition frequency	f_T	$V_{CB} = 10 \text{ V}, I_{E} = -2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz

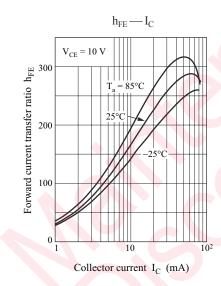
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

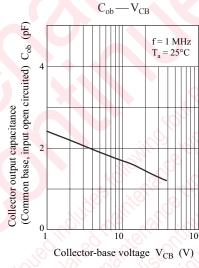
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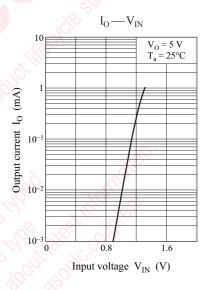


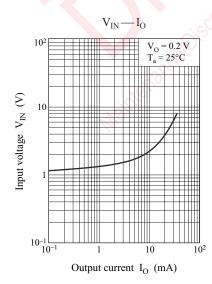






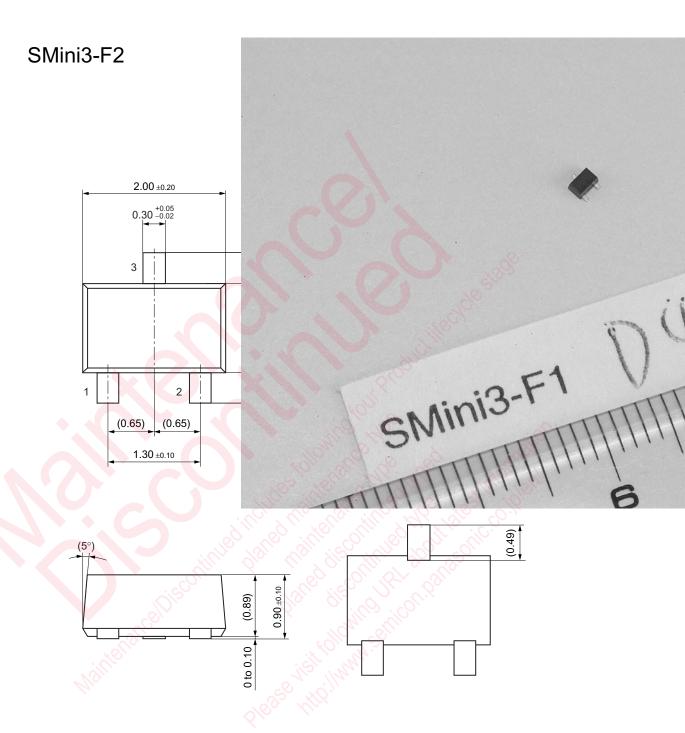






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