## **UNR32AE**

## Silicon NPN epitaxial planar type

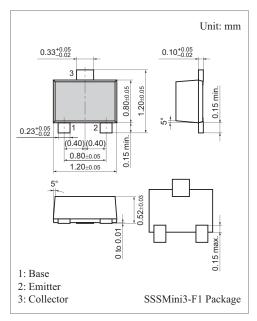
## For digital circuits

#### ■ Features

- Suitable for high-density mounting and downsizing of the equipment
- Contribute to low power consumption

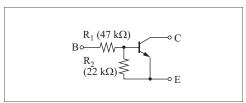
## ■ Absolute Maximum Ratings $T_{a} = 25$ °C

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	$V_{CBO}$	50	V	
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	50	V	
Collector current	$I_{C}$	80	mA	
Total power dissipation	P <sub>T</sub>	100	mW	
Junction temperature	T <sub>j</sub>	125	°C	
Storage temperature	T <sub>stg</sub>	-55 to +125	°C	



### Marking Symbol: KC

#### Internal Connection

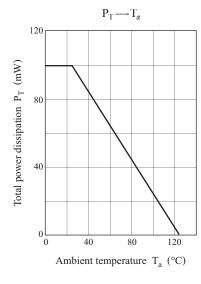


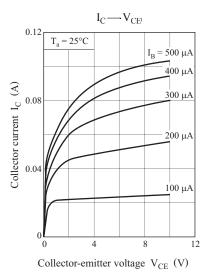
## ■ Electrical Characteristics $T_a = 25$ °C±3°C

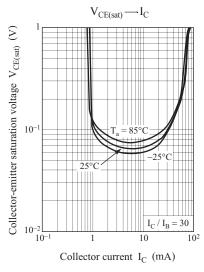
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_{\rm C} = 10  \mu A, I_{\rm E} = 0$	50			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_{\rm CI} = 2 \text{ mA}, I_{\rm B} = 0$	50			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 50 \text{ V}, I_{E} = 0$			0.1	μΑ
Collector-emitter cutoff current (Base open)	I <sub>CEO</sub>	$V_{CH} = 50 \text{ V}, I_{B} = 0$			0.5	μΑ
Emitter-base cutoff current (Collector open)	I <sub>EBO</sub>	$V_{EB} = 6 \text{ V}, I_{C} = 0$			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 <sub>CE(sat)</sub>	$I_{\rm Cl} = 10 \text{ mA}, I_{\rm B} = 0.3 \text{ mA}$			0.25	V
Output voltage high-level	V <sub>OH</sub>	$V_{CCI} = 5 \text{ V}, V_B = 0.5 \text{ V}, R_{LI} = 1 \text{ k}\Omega$	4.9			V
Output voltage low-level	V <sub>OL</sub>	$V_{CCI} = 5 \text{ V}, V_B = 6 \text{ V}, R_L = 1 \text{ k}\Omega$			0.2	V
Input resistance	R <sub>1</sub>		-30%	47	+30%	kΩ
Resistance ratio	$R_1/R_2$		1.7	2.1	2.6	_
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_{E} = -2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz

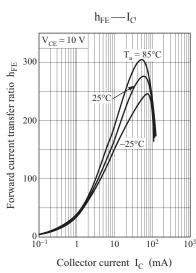
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

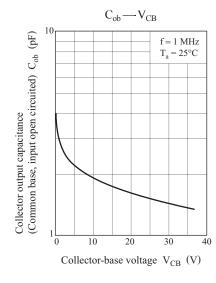
UNR32AE Panasonic

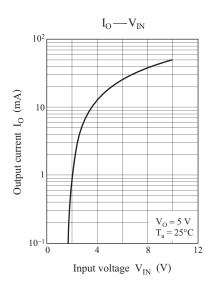


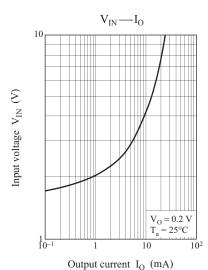












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