

F2SC2873U**List**

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F2SC2873U

2A, 50V NPN Silicon Transistor

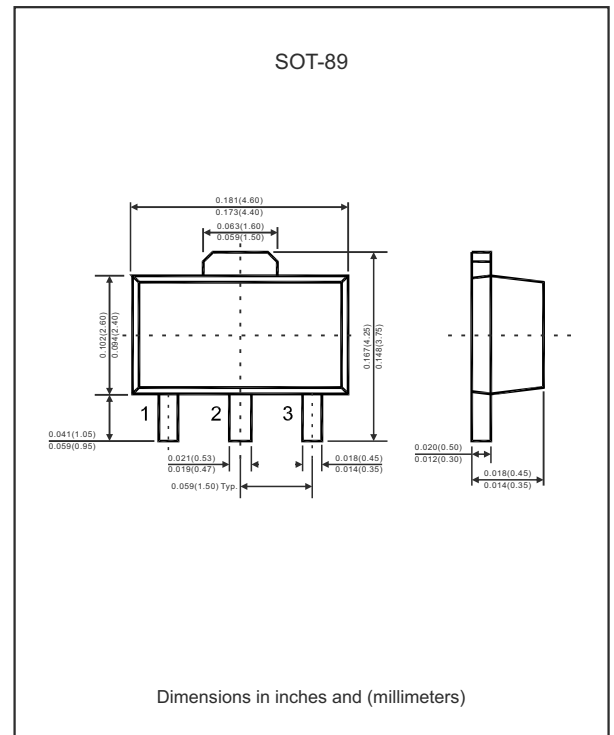
Features

- Low saturation voltage.
- High speed switching time.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen free part, ex. F2SC2873U-H

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-89
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.045 gram

Package outline



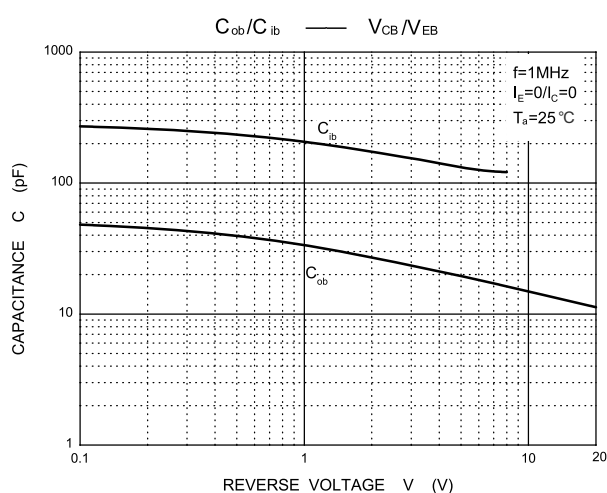
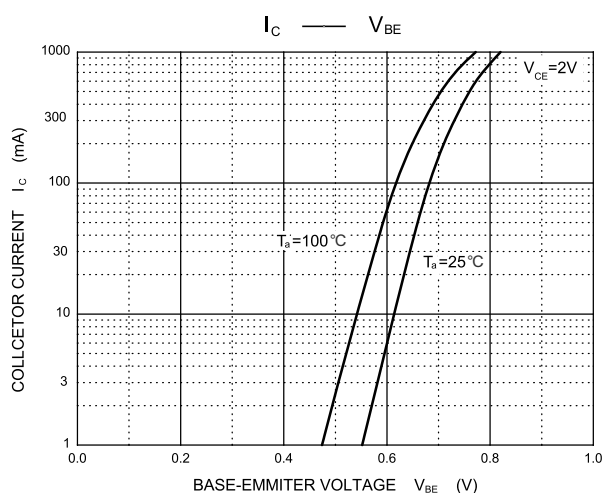
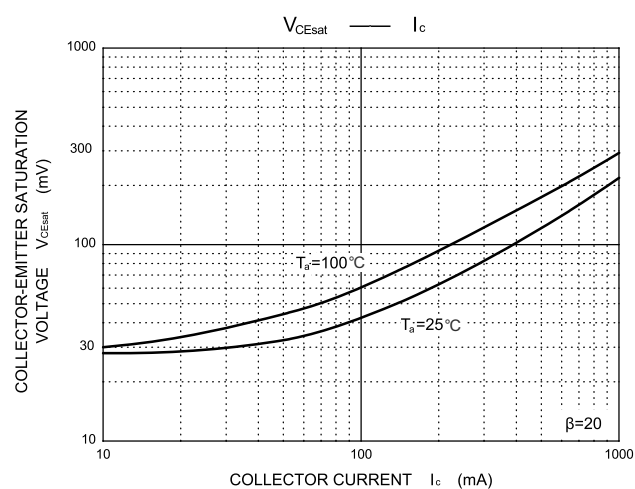
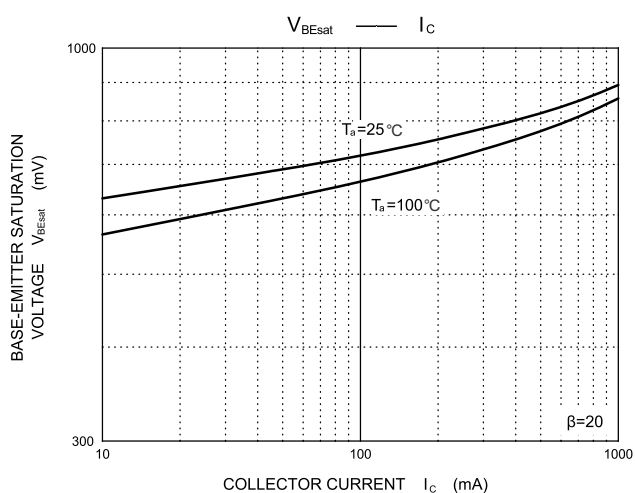
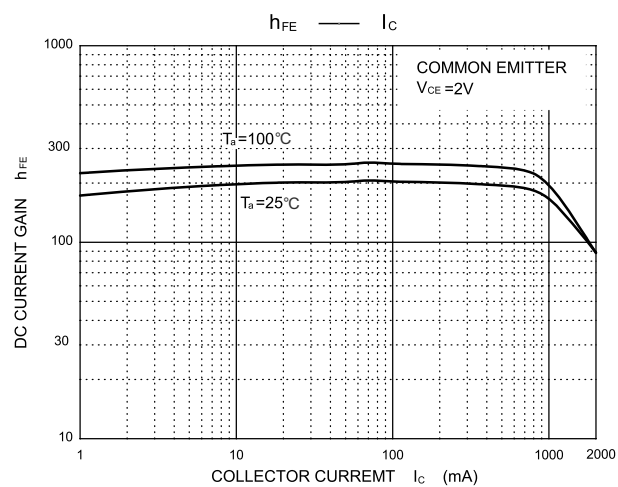
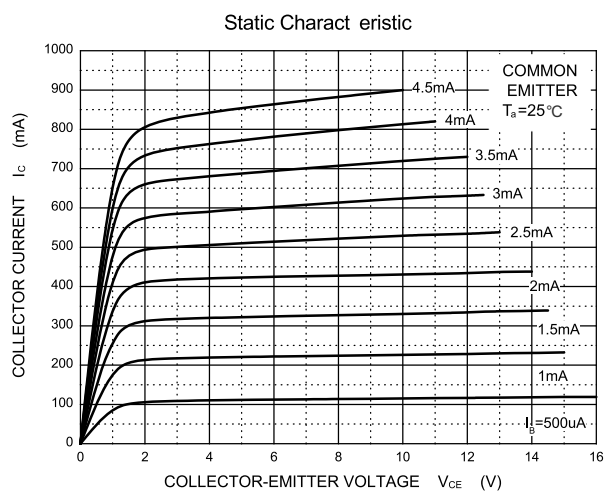
Maximum ratings (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector to base voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	5	V
Collector current-DC	I_C	2	A
Collector power dissipation	P_D	0.5	W
Junction temperature	T_J	+150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$
Maximum junction to ambient	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$

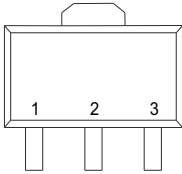
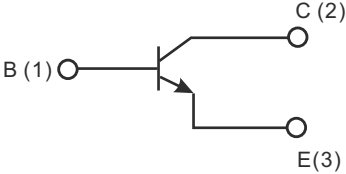
F2SC2873U**Electrical characteristics** (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Off Characteristics						
Collector-base breakdown voltage	$I_C=100\mu\text{A}$, $I_E=0$	$V_{(BR)CBO}$	50			V
Collector-emitter breakdown voltage	$I_C=1\text{mA}$, $I_B=0$	$V_{(BR)CEO}$	50			V
Emitter-base breakdown voltage	$I_E=100\mu\text{A}$, $I_C=0$	$V_{(BR)EBO}$	5			V
Collector-emitter cut off current	$V_{CB}=50\text{V}$, $I_E=0$	I_{CBO}			100	nA
Emitter-base cut off current	$V_{EB}=5\text{V}$, $I_C=0$	I_{EBO}			100	nA
On Characteristics						
DC current gain current gain	$V_{CE}=2\text{V}$, $I_C=500\text{mA}$	h_{FE}	120		240	
	$V_{CE}=2\text{V}$, $I_C=2\text{A}$		20			
Base-emitter saturation voltage	$I_C=1\text{A}$, $I_B=50\text{mA}$	$V_{BE(sat)}$			1.2	V
Collector-emitter saturation voltage	$I_C=1\text{A}$, $I_B=50\text{mA}$	$V_{CE(sat)}$			0.5	V
Small Signal Characteristics						
Output capacitance	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$	C_{ob}		30		pF
Gain-bandwidth product	$V_{CE}=2\text{V}$, $I_C=0.5\text{A}$	f_T		120		MHz

Rating and characteristic curves (F2SC2873U)

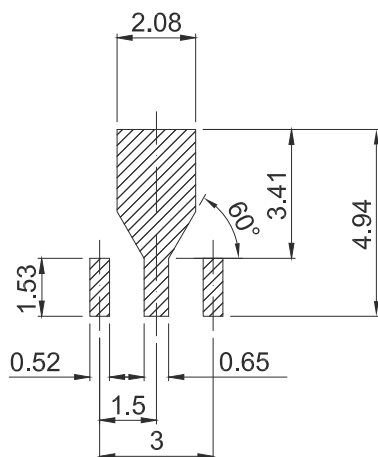


F2SC2873U**Pinning information**

Pin	Simplified outline	Symbol
Pin1 BASE Pin2 COLLECTOR Pin3 EMITTER		

Marking

Type number	Marking code
F2SC2873U	MY

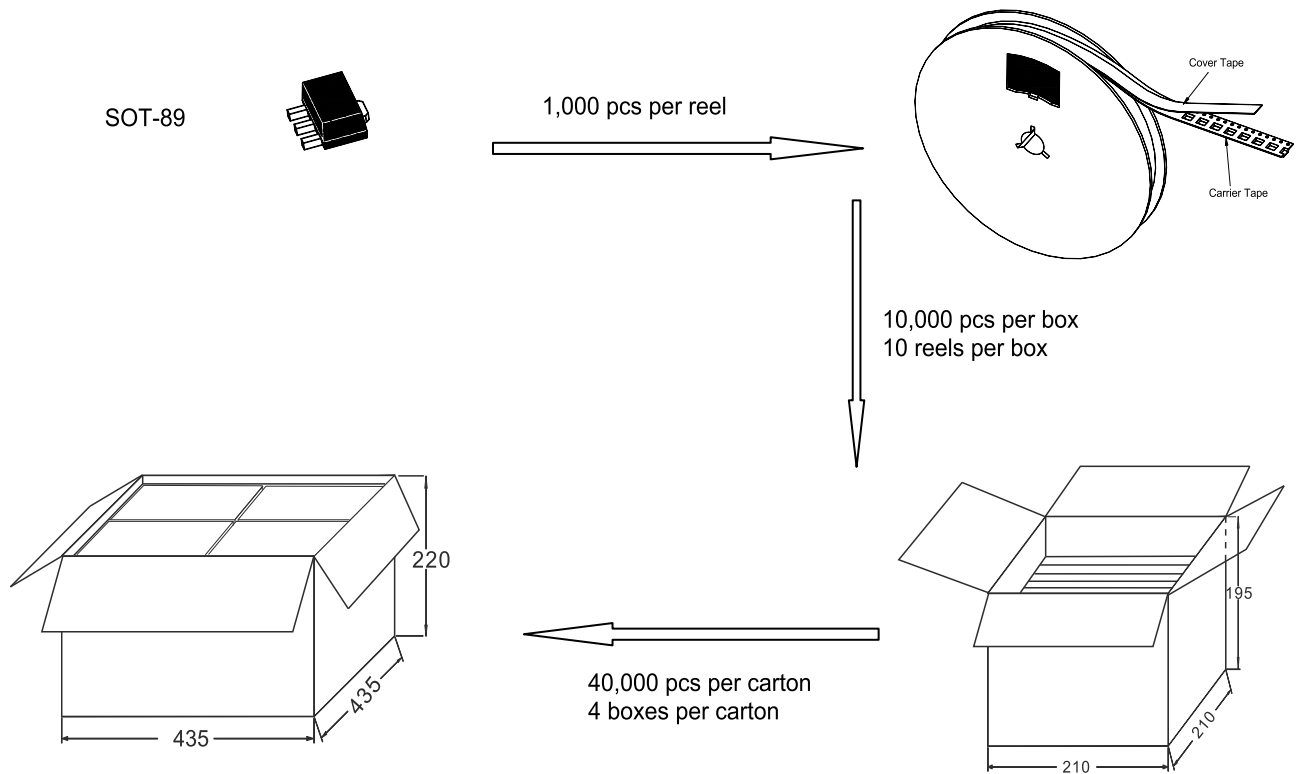
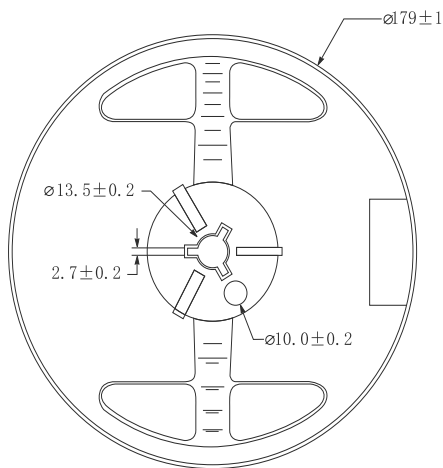
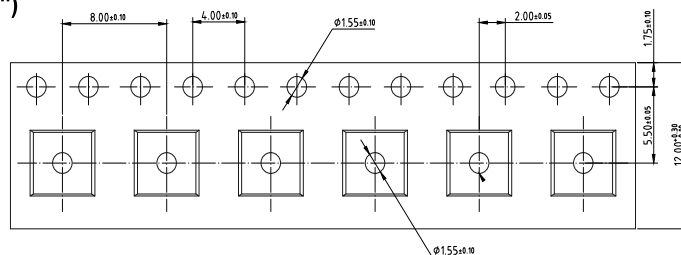
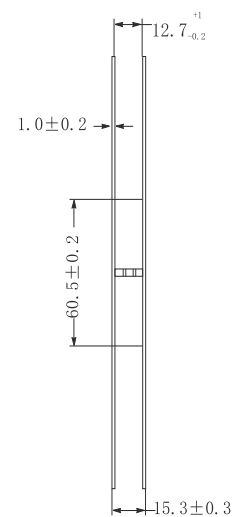
Suggested solder pad layout

Note :

1. Controlling dimension : in millimeters.
2. General tolerance : $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

F2SC2873U

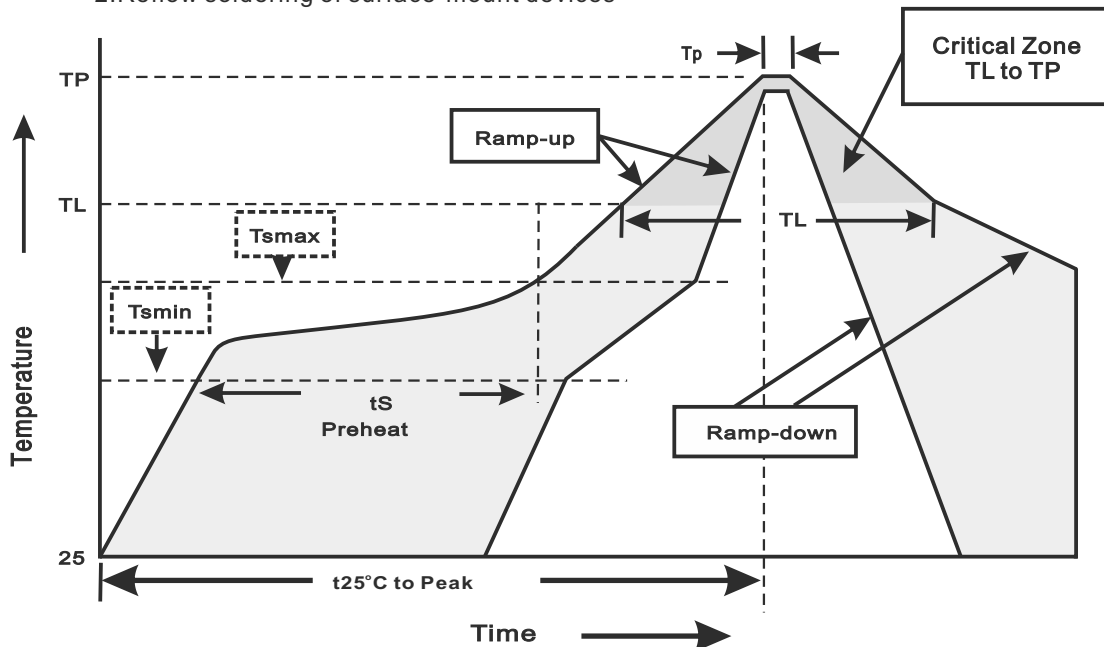
The method of packaging

**Embossed tape and reel data****Reel (7")****Tape (12mm)**

F2SC2873U

Suggested thermal profiles for soldering processes

1. Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2. Reflow soldering of surface-mount devices



3. Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<3°C/sec
Time 25°C to Peak Temperature	<6minutes