

F2SC2383RU/OU/YU**List**

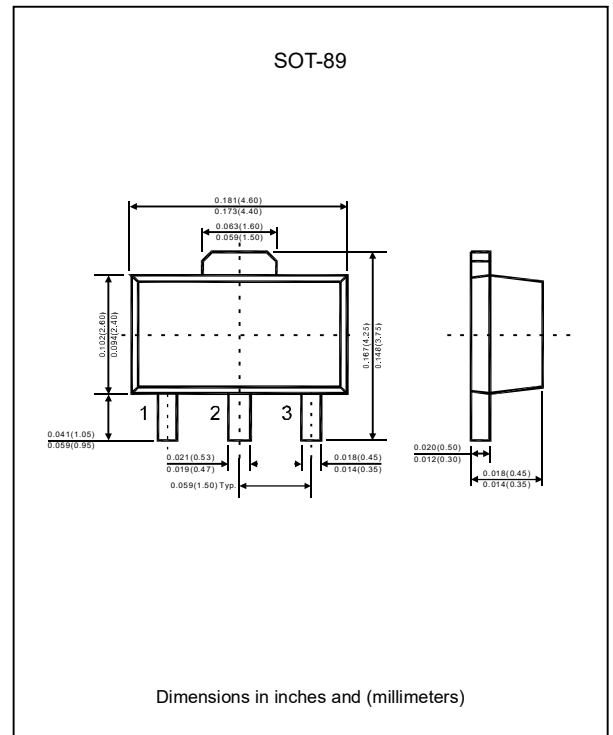
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F2SC2383RU/OU/YU**1A, 160V NPN Silicon Transistor****Features**

- Excellent h_{FE} characteristics.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen free part, ex. F2SC2383RU-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

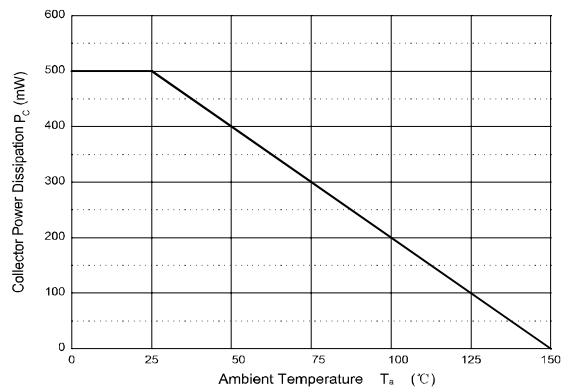
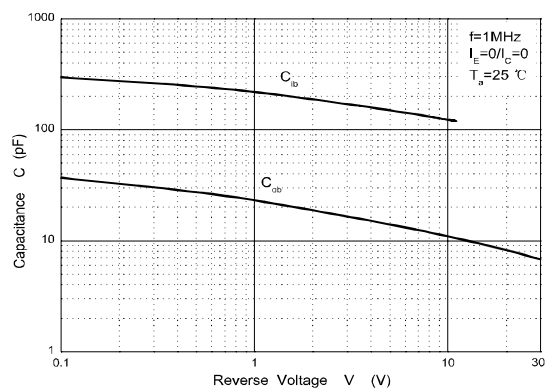
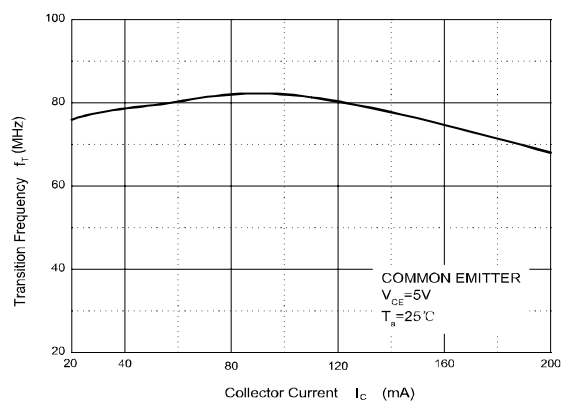
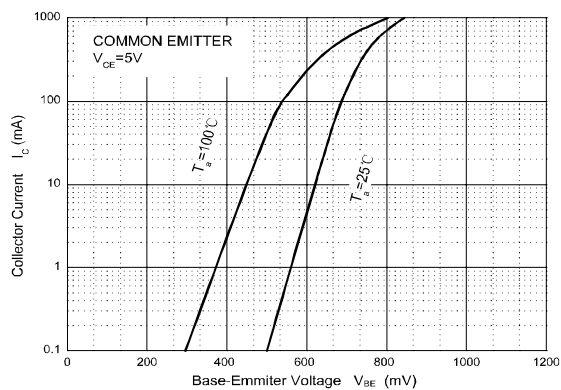
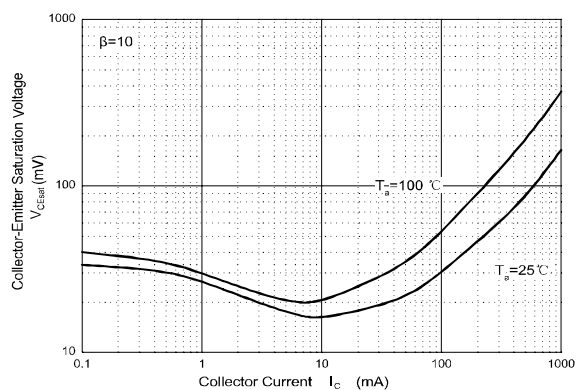
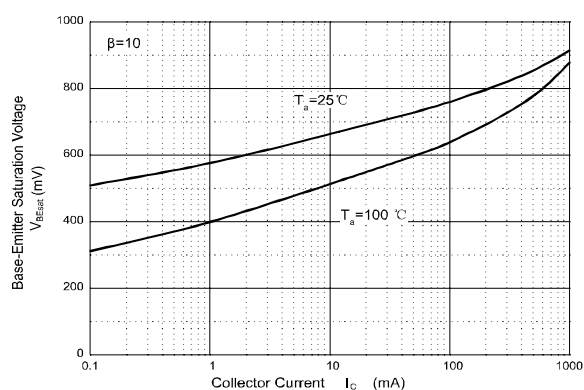
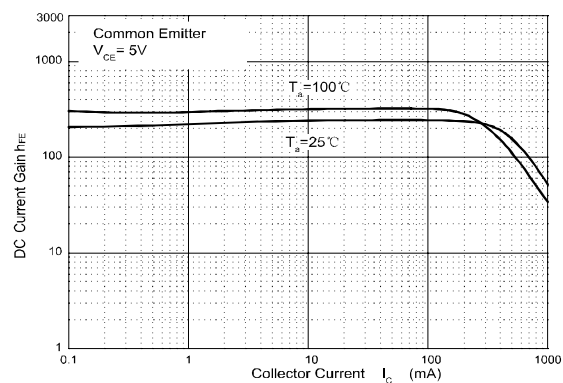
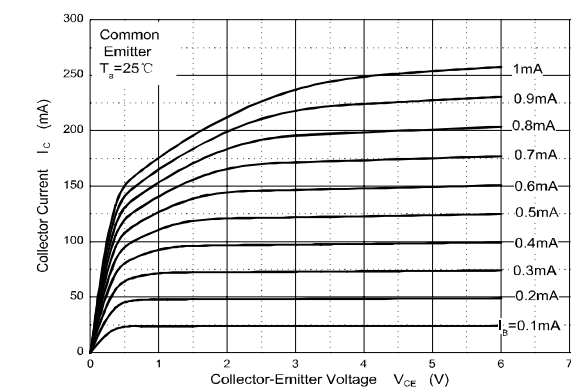
Package outline**Maximum ratings** (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector to base voltage	V_{CBO}	160	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to base voltage	V_{EBO}	6	V
Collector current-DC	I_C	1	A
Collector power dissipation	P_D	500	mW
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	$^{\circ}\text{C/W}$

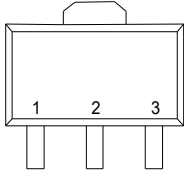
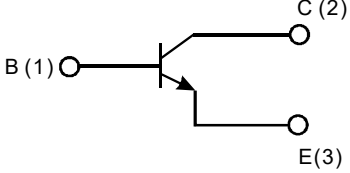
F2SC2383RU/OU/YU**Electrical characteristics** (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Off Characteristics						
Collector-base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	$V_{(BR)CEO}$	160			V
Collector-emitter cut off current	$V_{CB} = 150\text{V}$, $I_E = 0$	I_{CBO}			1	μA
Emitter-base cut off current	$V_{EB} = 6\text{V}$, $I_C = 0$	I_{EBO}			1	μA
On Characteristics						
DC current gain current gain group F2SC2383RU	$V_{CE}=5\text{V}$, $I_C=200\text{mA}$	h_{FE}	60		120	
F2SC2383OU			100		240	
F2SC2383YU			160		320	
Base-emitter saturation voltage	$I_C=5\text{mA}$, $V_{CE}=5\text{V}$	$V_{BE(on)}$	0.45		0.75	V
Collector-emitter saturation voltage	$I_C=500\text{mA}$, $I_B=50\text{mA}$	$V_{CE(sat)}$			1.5	V
Small Signal Characteristics						
Output capacitance	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$	C_{ob}			20	pF
Gain-bandwidth product	$V_{CE}=5\text{V}$, $I_C=200\text{mA}$	f_T	20	100		MHz

Rating and characteristic curves (F2SC2383RU/OU/YU)

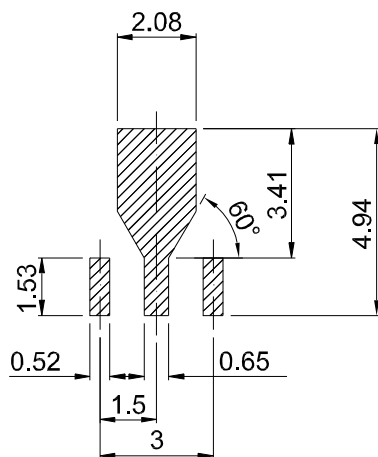


F2SC2383RU/OU/YU**Pinning information**

Pin	Simplified outline	Symbol
Pin1 BASE Pin2 COLLECTOR Pin3 EMITTER		

Marking

Type number	Marking code
F2SC2383RU	2383R
F2SC2383OU	2383O
F2SC2383YU	2383Y

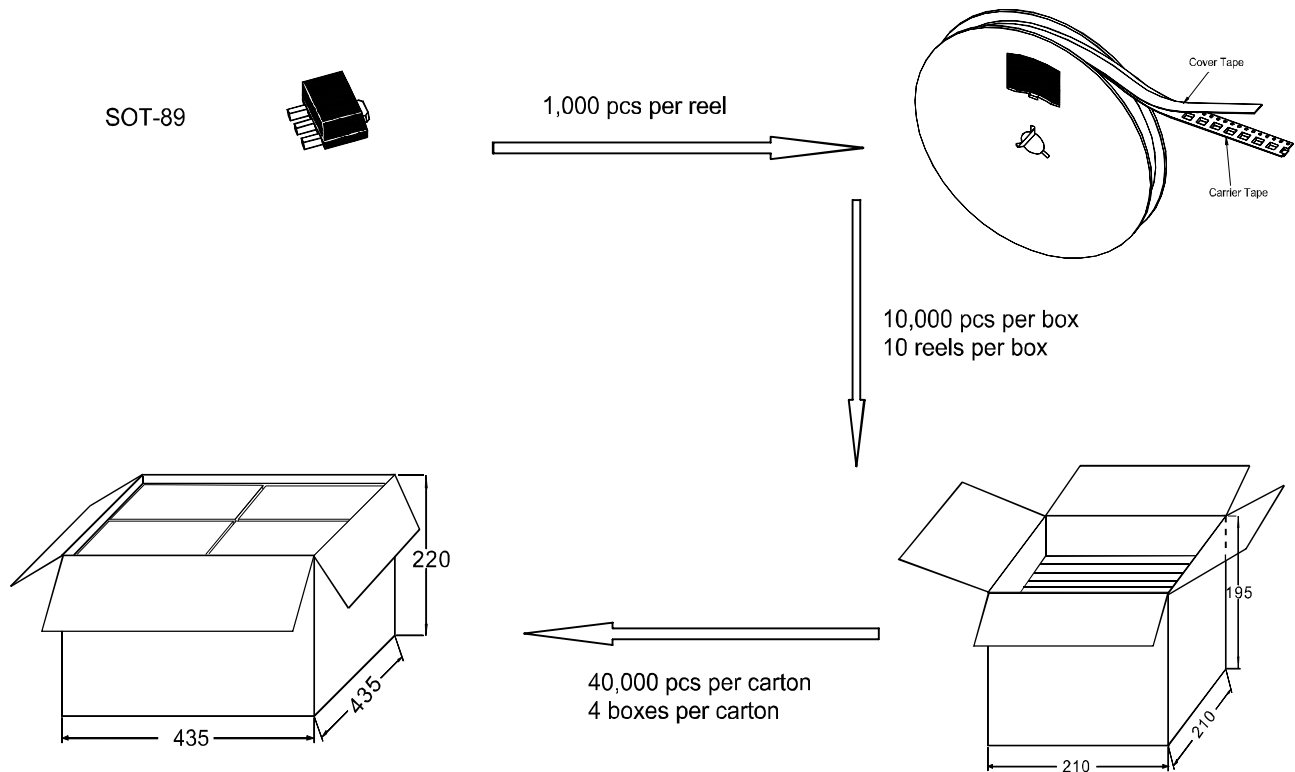
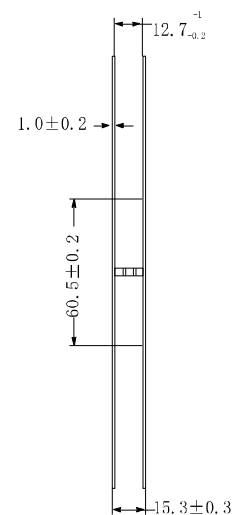
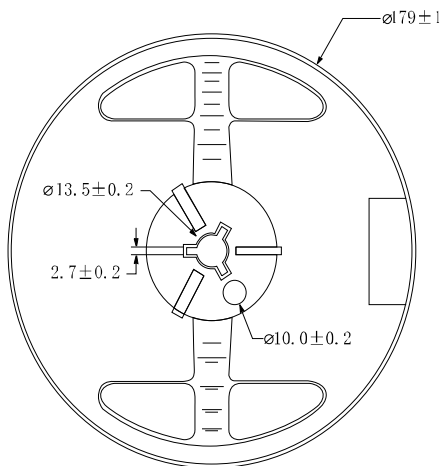
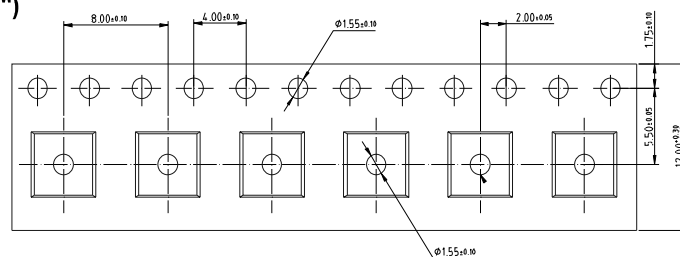
Suggested solder pad layout

Note :

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

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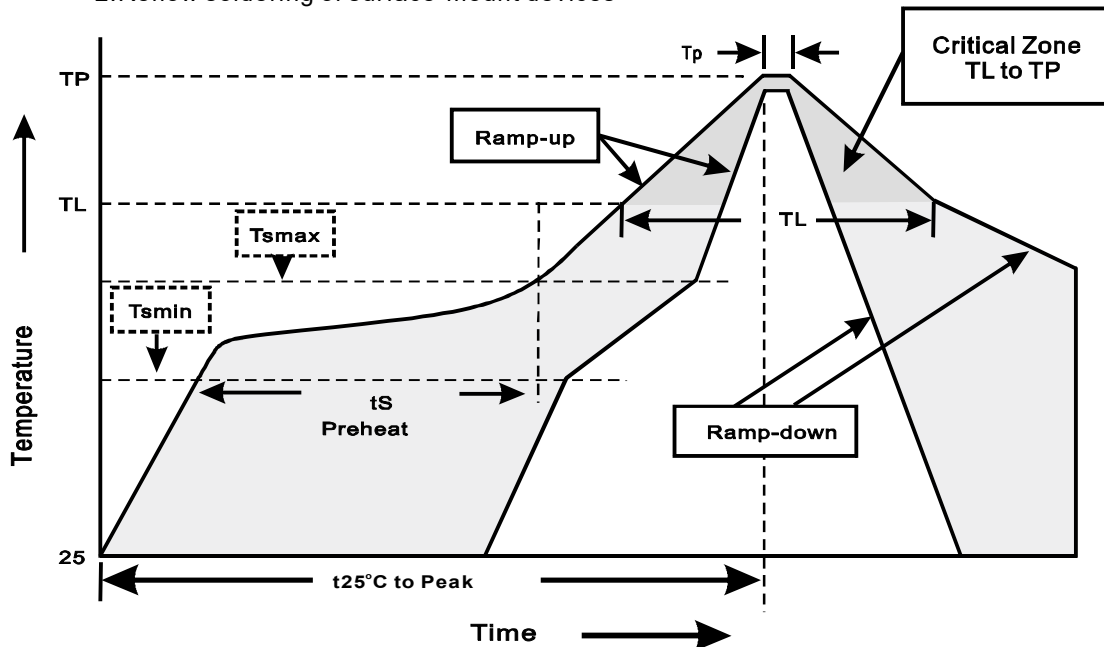
The method of packaging

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

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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(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _p)	10~30sec
Ramp-down Rate	<3°C/sec
Time 25°C to Peak Temperature	<6minutes