

F2SC4672P / F2SC4672Q / F2SC4672R**List**

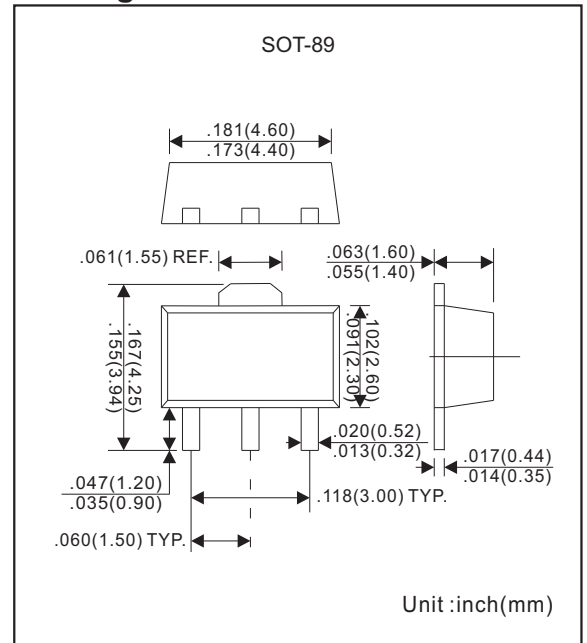
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F2SC4672P / F2SC4672Q / F2SC4672R**General Purpose Low Frequency Transistors
NPN Silicon****Features**

- Low saturation voltage
- Excellent h_{FE} characteristics
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen free part, ex. F2SC4672P-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-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	6.0	V
Collector current	I_C	2.0	A
Collector power dissipation	P_C	500	mW
Typical thermal resistance junction to ambient	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

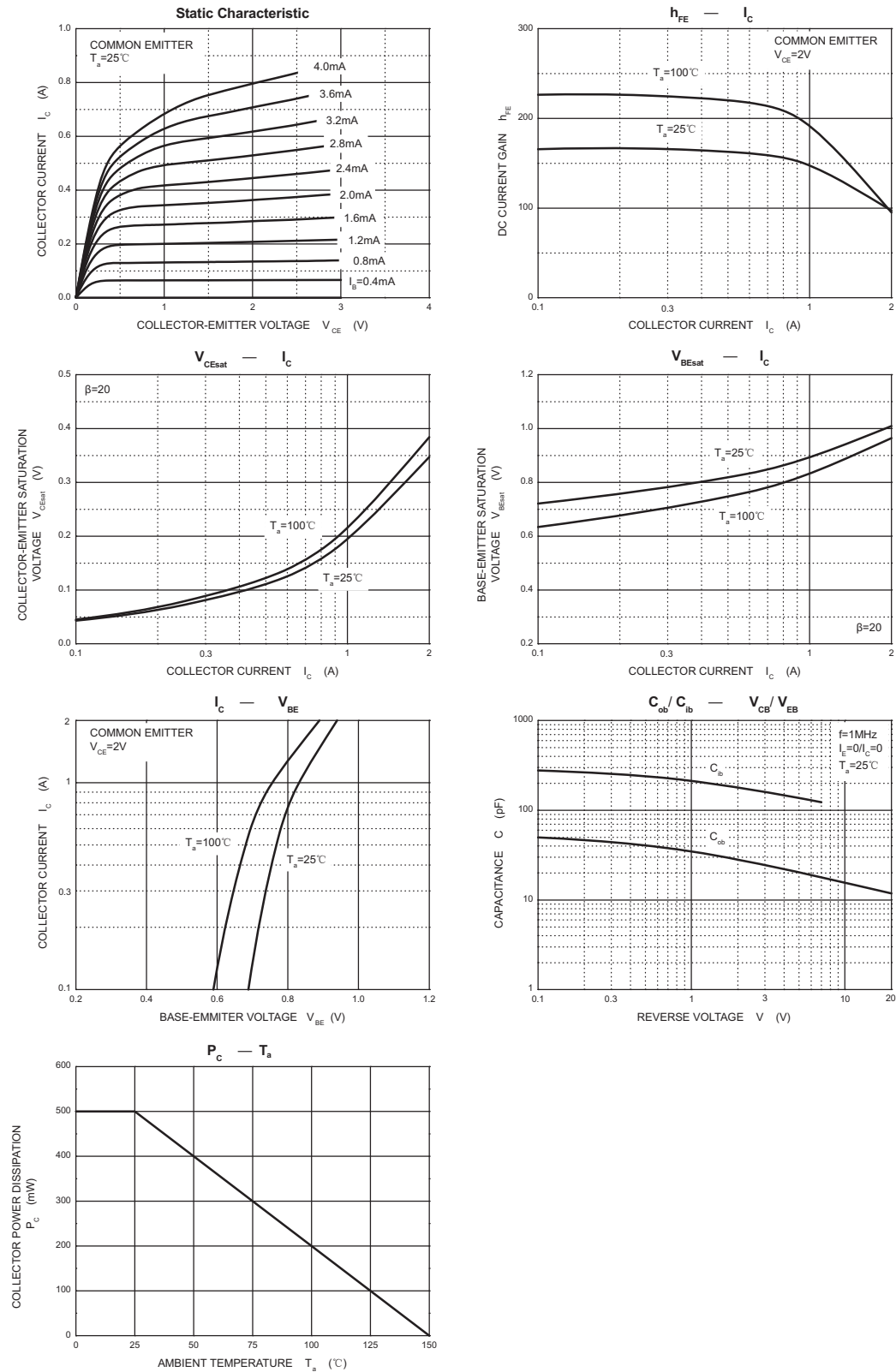
F2SC4672P / F2SC4672Q / F2SC4672R**Electrical characteristics** (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	Min.	Typ.	Max.	UNIT
Collector- base breakdown voltage	$I_C = 50\mu\text{A}, I_E=0$	$V_{(BR)CBO}$	60			V
Collector-emitter breakdown voltage	$I_C = 1\text{mA}, I_B=0$	$V_{(BR)CEO}$	50			V
Emitter-base breakdown voltage	$I_E = 50\mu\text{A}, I_C=0$	$V_{(BR)EBO}$	6.0			V
Collector cutoff current	$V_{CB} = 60\text{V}, I_E = 0$	I_{CBO}			0.1	μA
Emitter cutoff current	$V_{EB} = 5\text{V}, I_C = 0$	I_{EBO}			0.1	μA
DC current gain	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	h_{FE}	82		390	
Collector-emitter saturation voltage	$I_C = 1\text{A}, I_B = 50\text{mA}$	$V_{CE(sat)}$			0.35	V
Collector output capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	C_{ob}		25		pF
Transition frequency	$V_{CE} = 2\text{V}, I_C = 500\text{mA}, f=100\text{MHz}$	f_T		210		MHZ

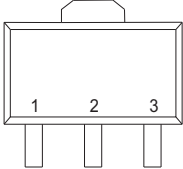
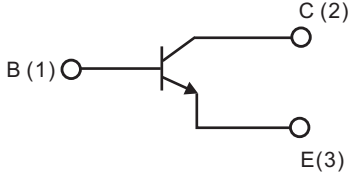
Classification of h_{FE}

Rank	P	Q	R
Range	82-180	120-270	180-390

Rating and characteristic curves (F2SC4672P / F2SC4672Q / F2SC4672R)

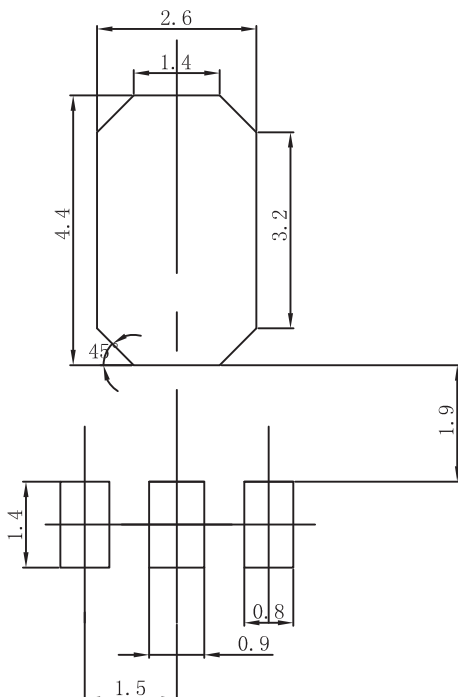


F2SC4672P / F2SC4672Q / F2SC4672R**Pinning information**

Pin	Simplified outline	Symbol
Pin1 BASE Pin2 COLLECTOR Pin3 EMITTER		

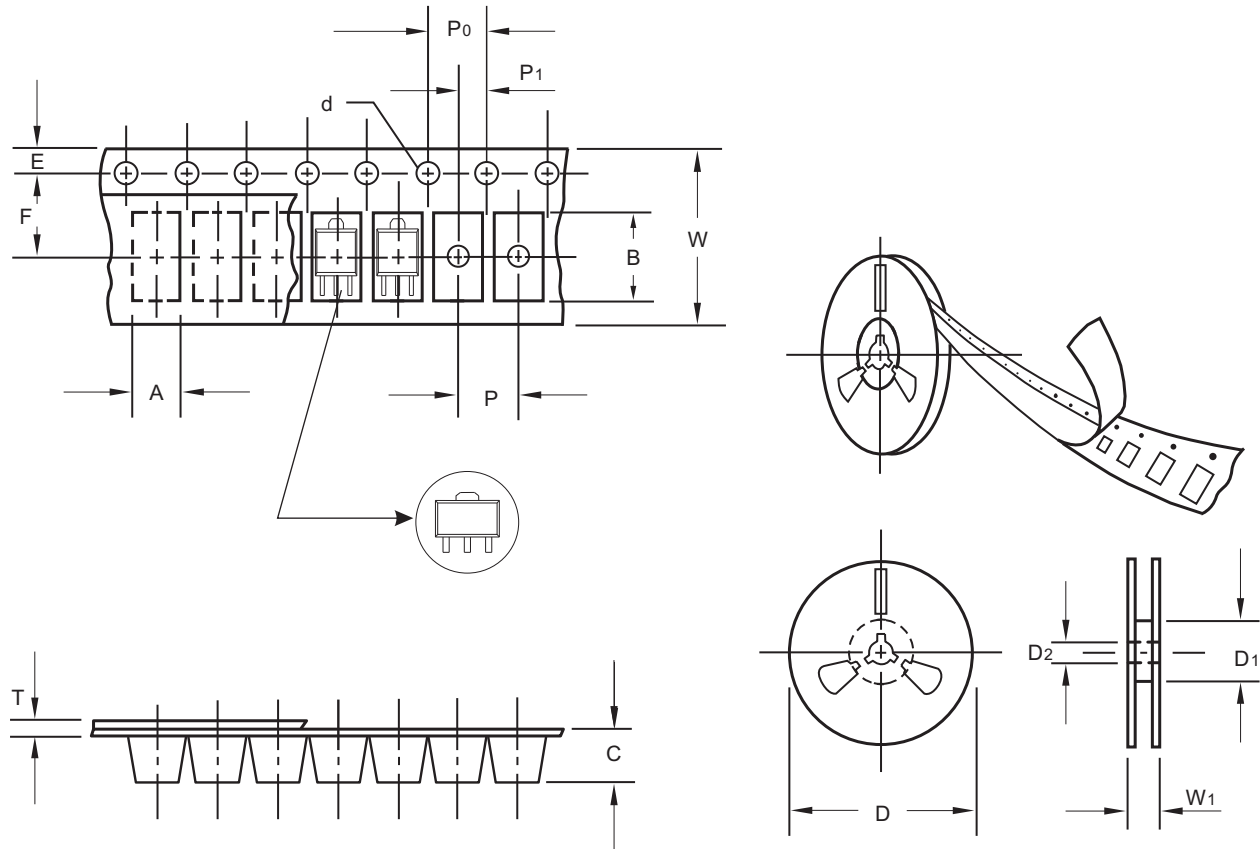
Marking

Type number	Marking code
F2SC4672P	DKP
F2SC4672Q	DKQ
F2SC4672R	DKR

Suggested solder pad layout

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

F2SC4672P / F2SC4672Q / F2SC4672R**Packing information**

unit:mm

Item	Symbol	Tolerance	SOT-89
Carrier width	A	0.1	4.85
Carrier length	B	0.1	4.45
Carrier depth	C	0.1	1.85
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	1.0	180.00
7" Reel inner diameter	D1	1.5	60.00
Feed hole diameter	D2	0.2	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.01	0.292
Tape width	W	0.1	12.00
Reel width	W1	0.2	16.50

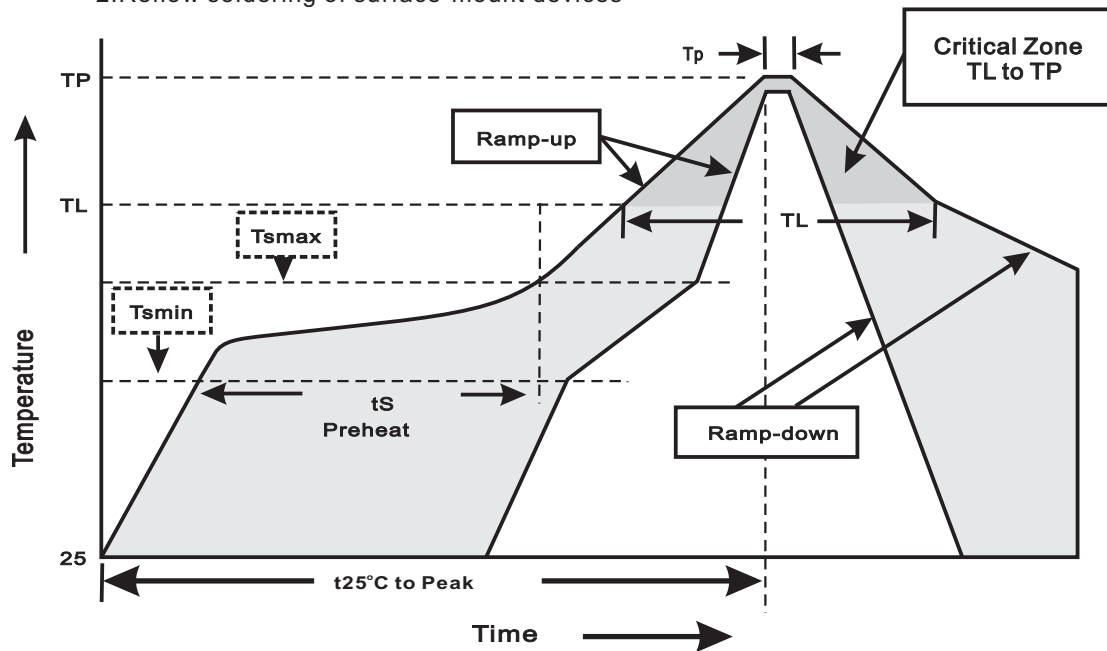
Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

F2SC4672P / F2SC4672Q / F2SC4672R**Reel packing**

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-89	7"	1,000	8.0	10,000	183*123*183	178	382*257*387	80,000	18.5

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