

HIGH VOLTAGE NPN TRANSISTOR

APT17

General Description

The APT17 is high voltage, small signal NPN transistor.

The APT17 is available in SOT-23 and TO-92 packages.

Features

- High Collector-Emitter Voltage: 480V

Applications

- High Voltage and Low Standby Power Circuit for BCD Solution

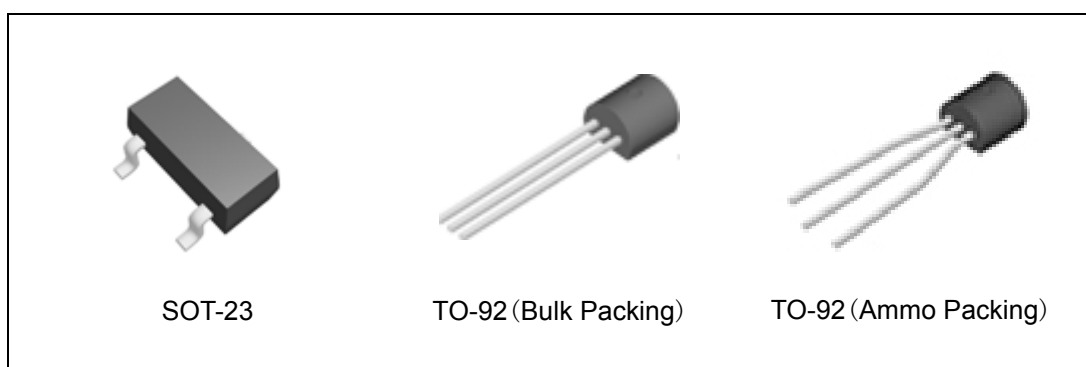


Figure 1. Package Types of APT17

Pin Configuration

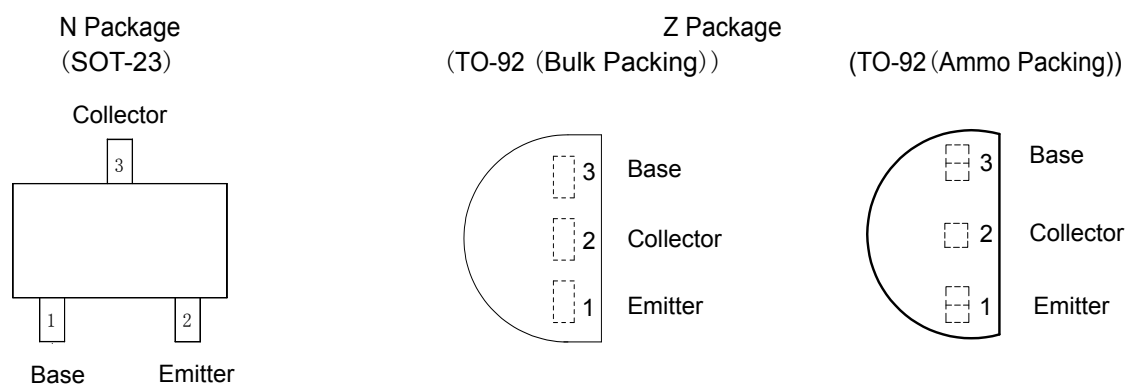
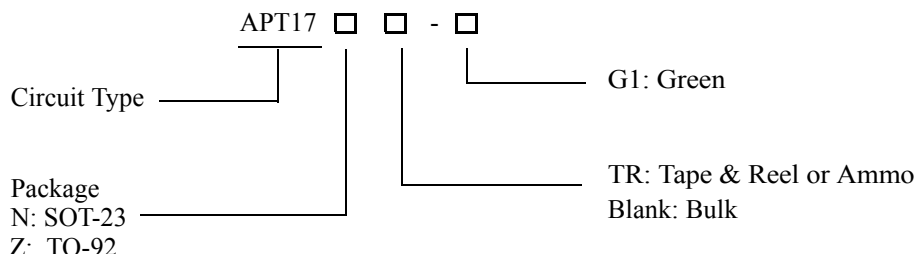


Figure 2. Pin Configurations of APT17 (Top View)

**HIGH VOLTAGE NPN TRANSISTOR****APT17****Ordering Information**

Package	Part Number	Marking ID	Packing Type
SOT-23	APT17NTR-G1	GD8	Tape & Reel
TO-92	APT17Z-G1	APT17Z-G1	Bulk
	APT17ZTR-G1	APT17Z-G1	Ammo

BCD Semiconductor's products, as designated with "G1" suffix in the part number, are RoHS compliant and Green.

Absolute Maximum Ratings (Note 1)

Parameter		Symbol	Value	Unit
Collector-Emitter Voltage ($V_{BE}=0$)		V_{CES}	700	V
Collector-Emitter Voltage ($I_B=0$)		V_{CEO}	480	V
Emitter-Base Voltage ($I_C=0$)		V_{EBO}	10	V
Collector Current		I_C	50	mA
Collector Peak Current (Pulse)		I_{CM}	100	mA
Base Current		I_B	25	mA
Base Peak Current (Pulse)		I_{BM}	50	mA
Power Dissipation, $T_A=25^{\circ}\text{C}$	SOT-23	P_{TOT}	0.2	W
	TO-92		0.5	
Operating Junction Temperature			150	$^{\circ}\text{C}$
Storage Temperature Range			-55 to 150	$^{\circ}\text{C}$

Note 1: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

**HIGH VOLTAGE NPN TRANSISTOR****APT17****Thermal Characteristics**

Parameter		Symbol	Value	Unit
Thermal Resistance (Junction-to-Ambient)	SOT-23	θ_{JA}	625	$^{\circ}\text{C/W}$
	TO-92		250	

Electrical Characteristics($T_C=25^{\circ}\text{C}$, unless otherwise specified.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector Cut-off Current ($V_{BE}=-1.5\text{V}$)	I_{CEV}	$V_{CE}=700\text{V}$			10	μA
Collector-Emitter Sustaining Voltage ($I_B=0$)	$V_{CEO}(\text{sus})$	$I_C=300\mu\text{A}$	480			V
DC Current Gain	h_{FE}	$I_C=100\mu\text{A}$, $V_{CE}=20\text{V}$	21		36.5	
		$I_C=500\mu\text{A}$, $V_{CE}=20\text{V}$	24.5		35.5	
		$I_C=10\text{mA}$, $V_{CE}=20\text{V}$	20		45.5	

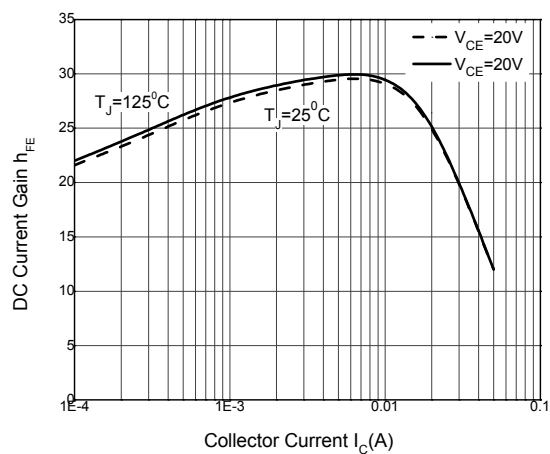
**HIGH VOLTAGE NPN TRANSISTOR****APT17****Typical Performance Characteristics**

Figure 3. DC Current Gain

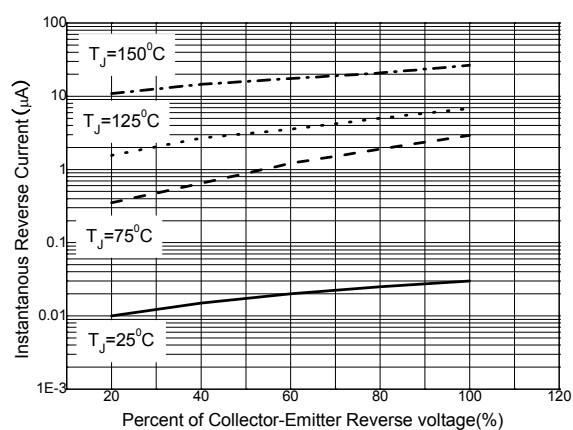


Figure 4. Typical Reverse Characteristics

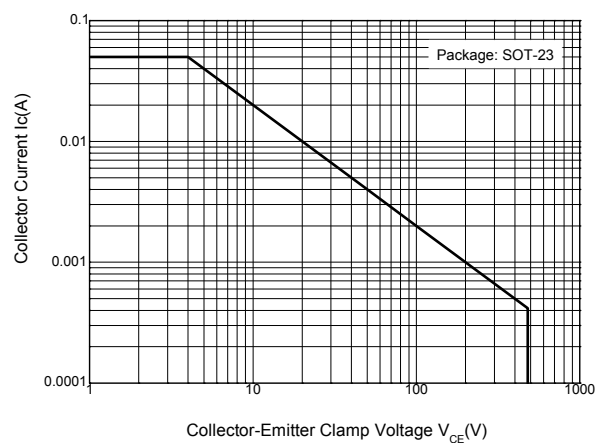


Figure 5. Safe Operating Areas

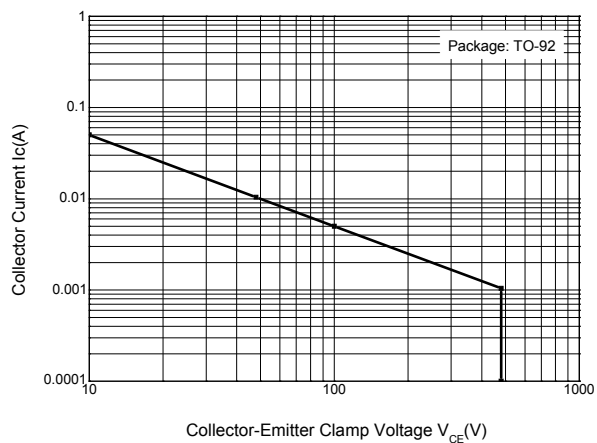
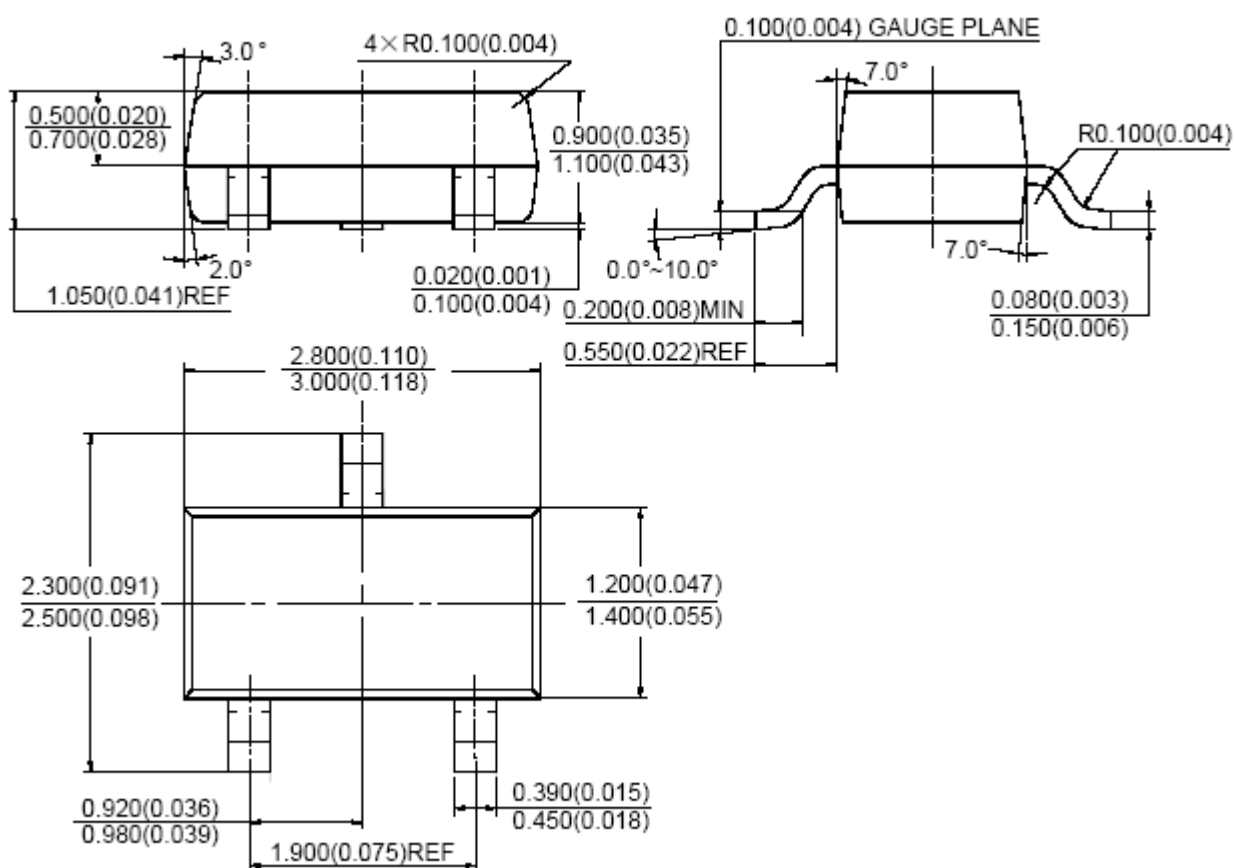
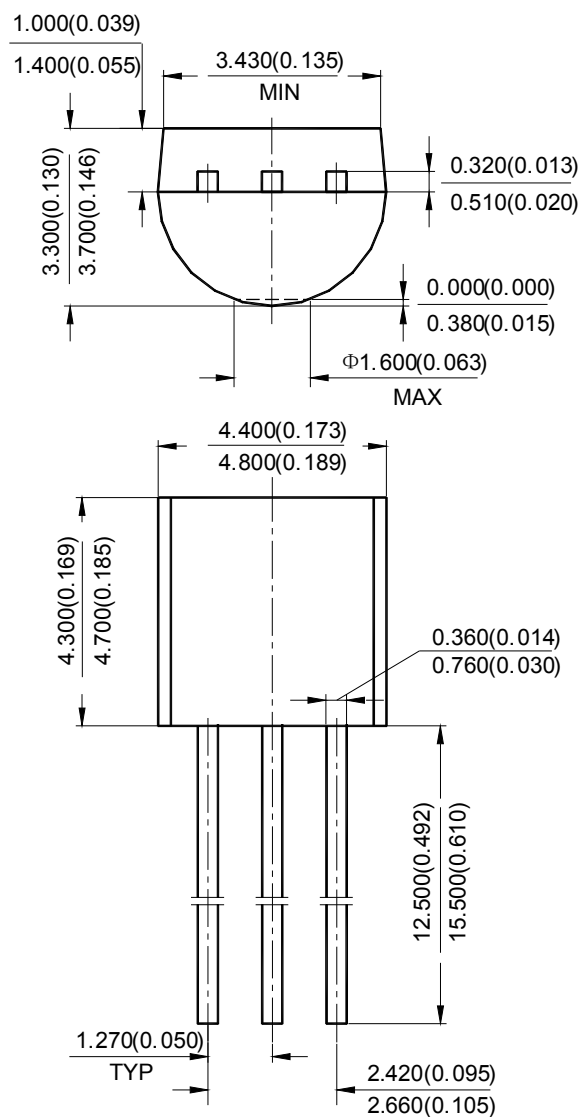
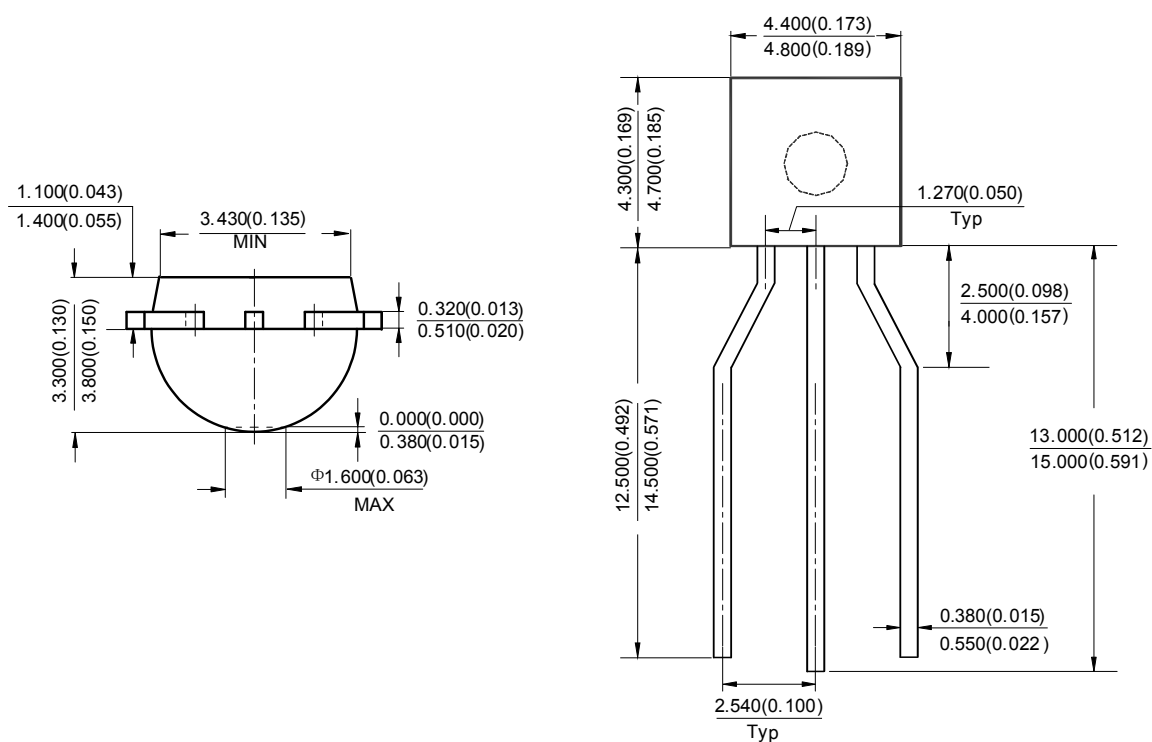


Figure 6. Safe Operating Areas

**HIGH VOLTAGE NPN TRANSISTOR****APT17****Mechanical Dimensions****SOT-23****Unit: mm(inch)**

**HIGH VOLTAGE NPN TRANSISTOR****APT17****Mechanical Dimensions (Continued)****TO-92 (Bulk Packing)****Unit: mm(inch)**

**HIGH VOLTAGE NPN TRANSISTOR****APT17****Mechanical Dimensions (Continued)****TO-92 (Ammo Packing)****Unit: mm(inch)**

HIGH VOLTAGE NPN TRANSISTOR

APT17

Soldering Information

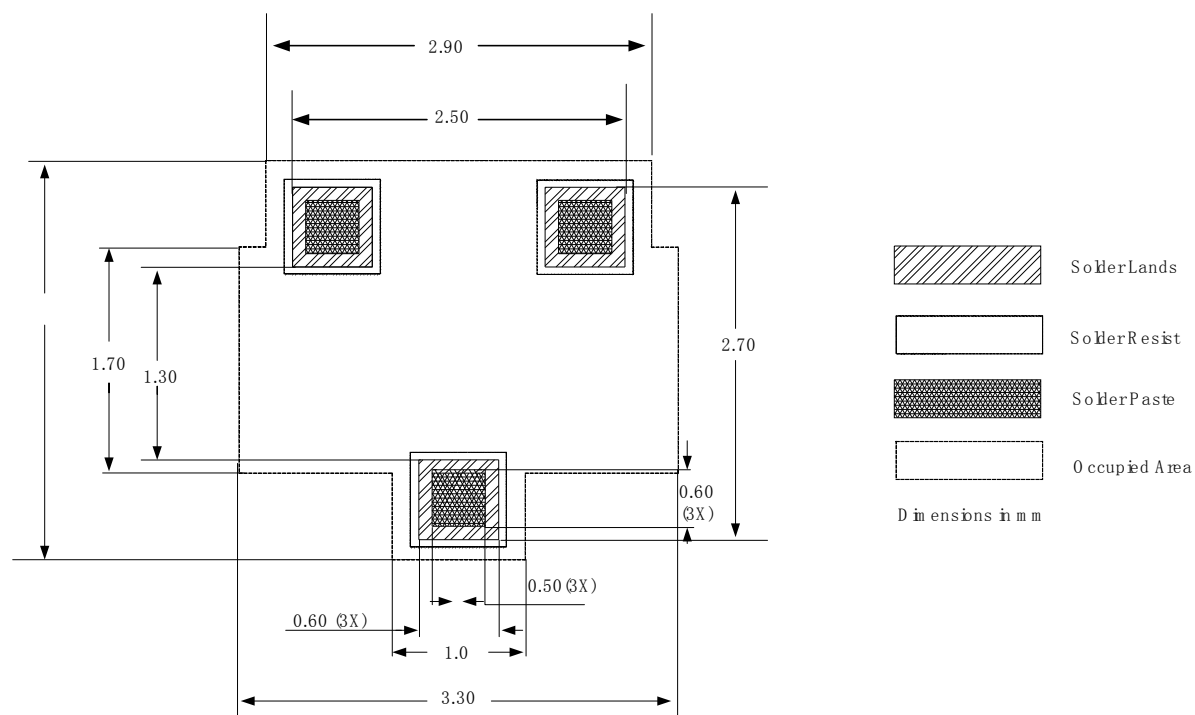


Figure 7. Reflow Soldering Footprint SOT-23

HIGH VOLTAGE NPN TRANSISTOR

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Soldering Information(Continued)

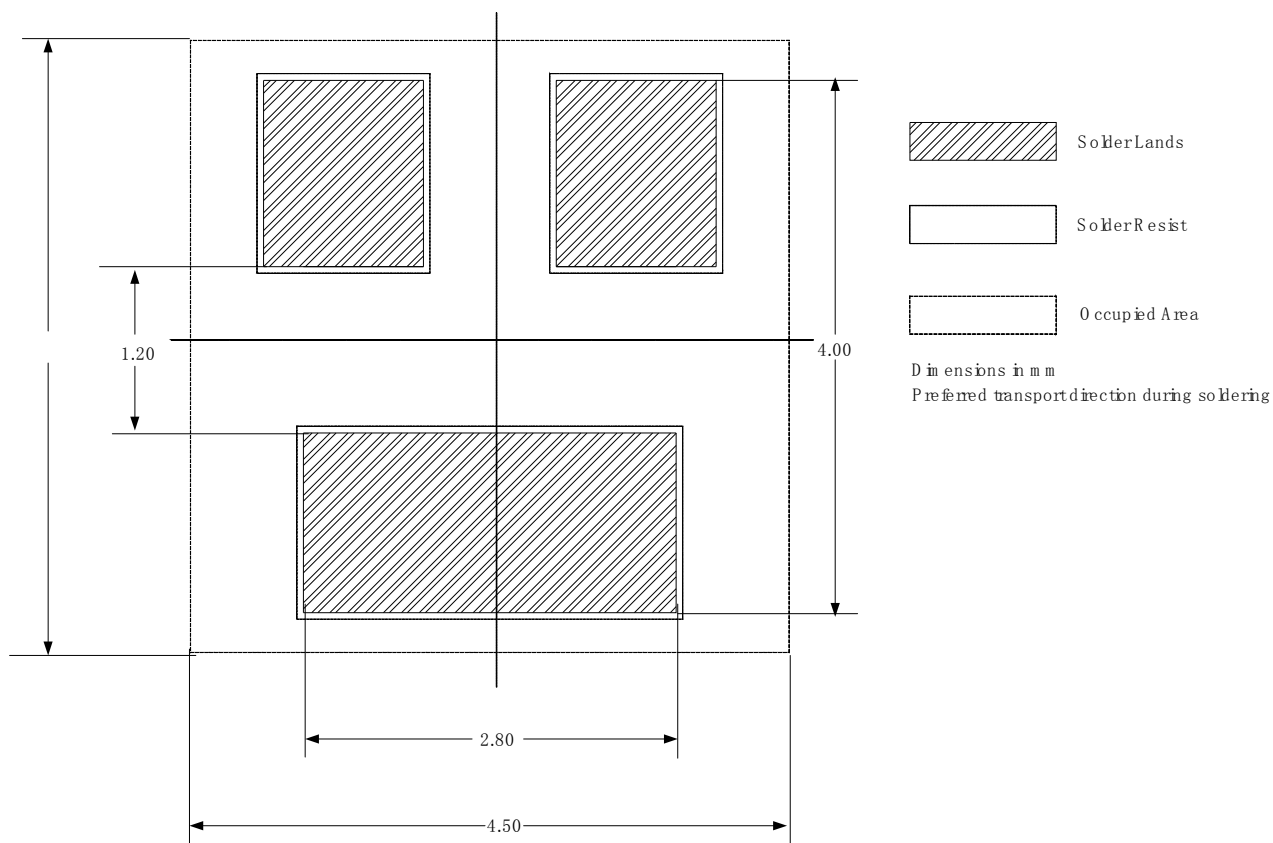


Figure 8. Waving Soldering Footprint SOT-23



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