



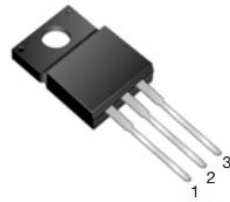
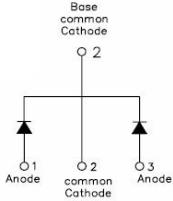
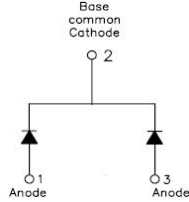
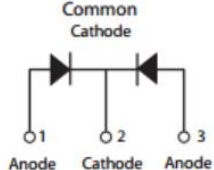
## ST60120C/STB60120C/STF60120C SCHOTTKY RECTIFIER

### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features

- 150 °C T<sub>J</sub> operation
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Trench MOS Schottky technology
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

ST60120C	STB60120C	STF60120C
		
		
TO-220AB	D <sup>2</sup> PAK	ITO-220AB

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	120	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =90°C, rectangular wave form	30(Per Leg) 60(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	300	A

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**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25 °C	0.70	-	V
		@ 30A, Pulse, T <sub>J</sub> = 25 °C	0.95	0.97	
	V <sub>F2</sub>	@ 15A, Pulse, T <sub>J</sub> = 125 °C	0.59	-	V
		@ 30A, Pulse, T <sub>J</sub> = 125 °C	0.70	0.75	
Reverse Current(Per Leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25°C	0.008	1	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125°C	6	45	mA

\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

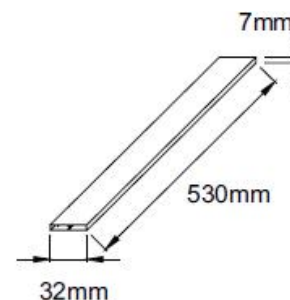
Characteristics	Symbol	ST60120C	STB60120C	STF60120C	Units
Junction Temperature	T <sub>J</sub>	-55 to +150			°C
Storage Temperature	T <sub>stg</sub>	-55 to +150			°C
Typical Thermal Resistance Junction to Case(Per Leg)	R <sub>θJC</sub>	2.8	2.2	5	°C/W

**Tube Specification**

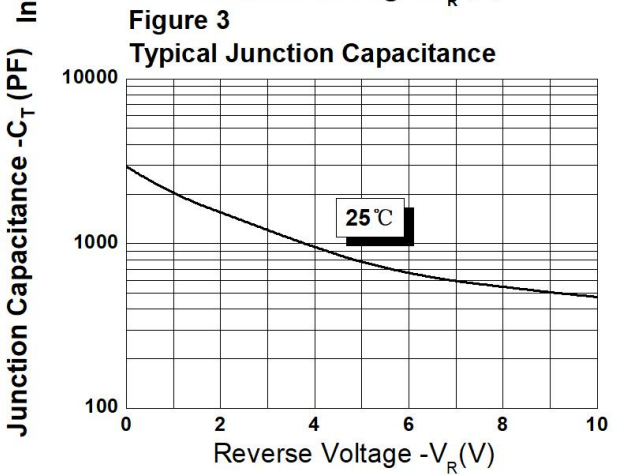
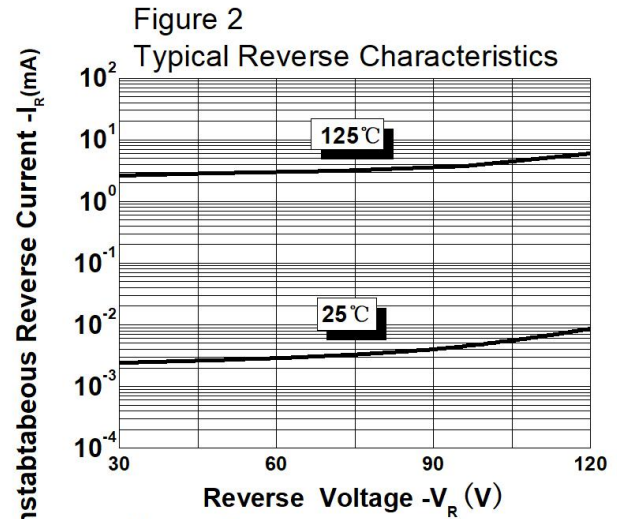
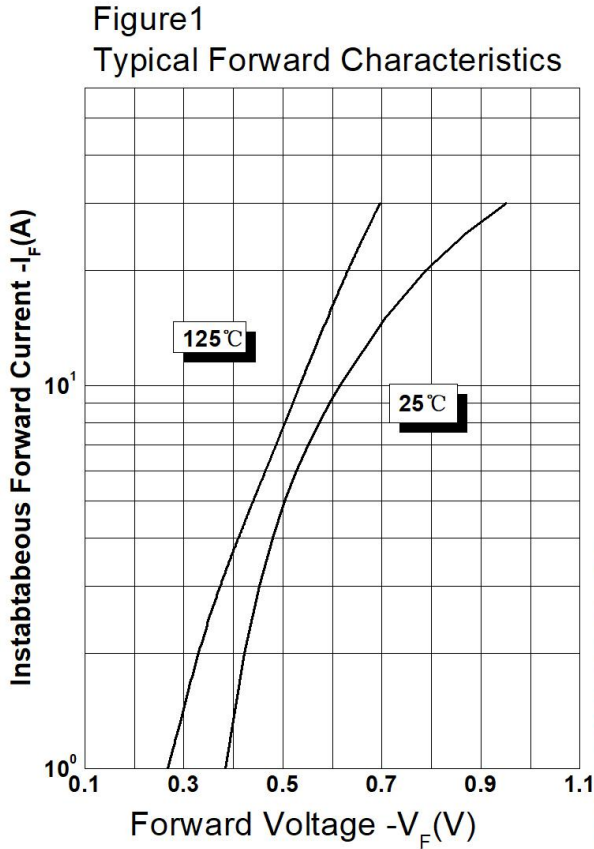
Device	Package	Weight	Shipping
ST60120C	TO-220AB	2.0	50pcs / tube
STB60120C	D <sup>2</sup> PAK	1.85	800pcs / reel
STF60120C	ITO-220AB	2.0	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Tube Specification(TO-220AB/ITO-220AB)**

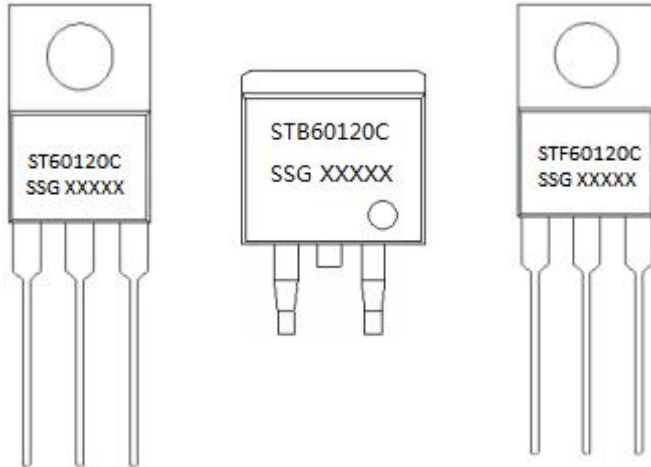


**Ratings and Characteristics Curves**



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**Marking Diagram**

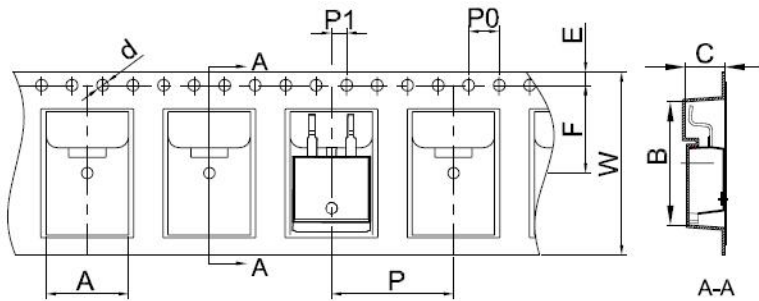


Where XXXXX is YYWWL

ST = Device Type  
B/F = Package type  
60 = Forward Current (60A)  
120 = Reverse Voltage (120V)  
C = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

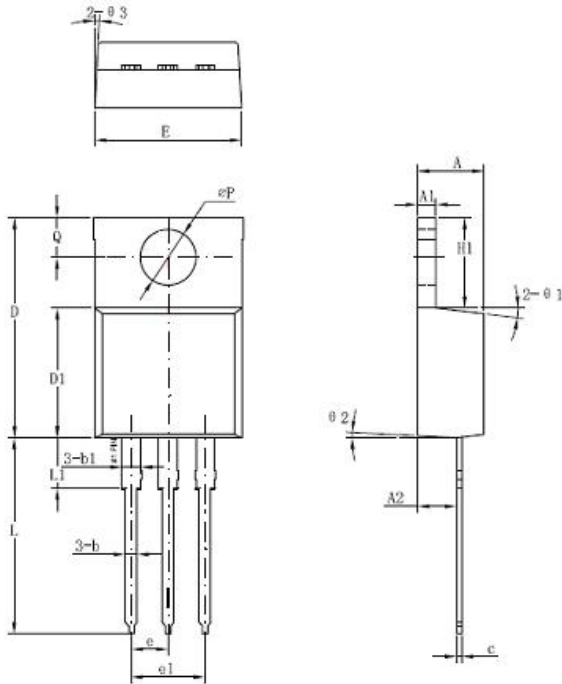
**Carrier Tape Specification D2PAK**



SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

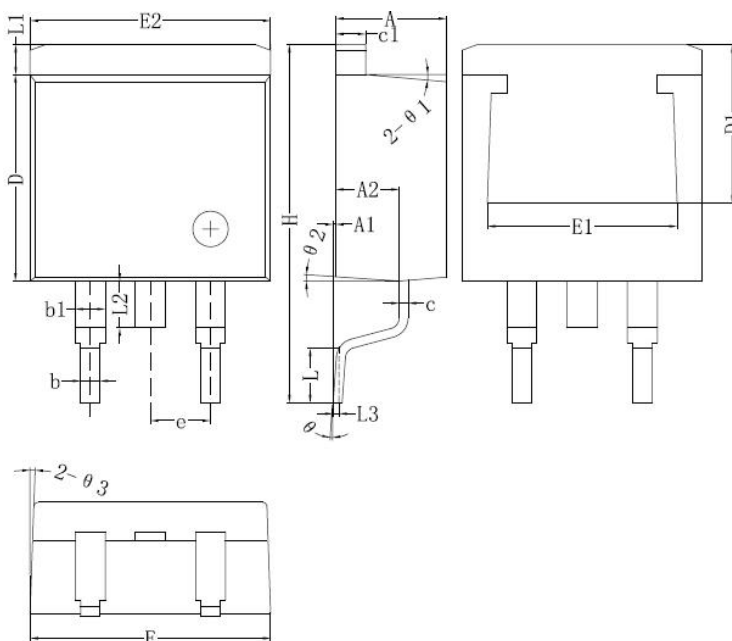
**Technical Data**  
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**Mechanical Dimensions TO-220AB**



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Ø1		7°	
Ø2		3°	
Ø3		4°	

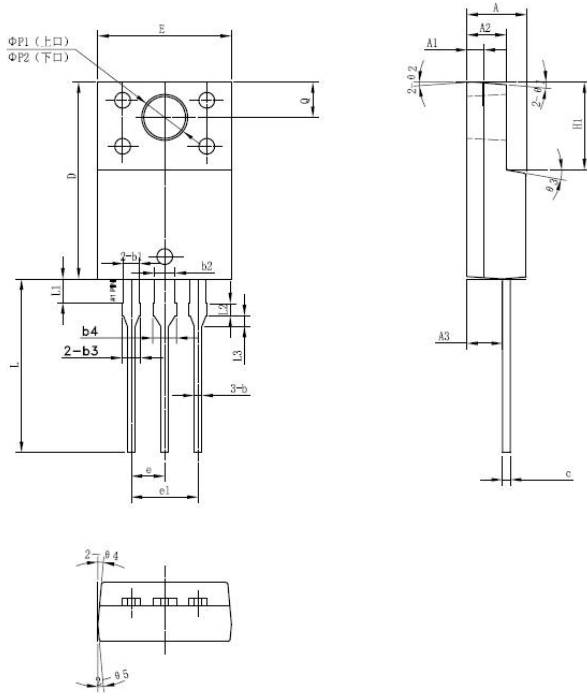
**Mechanical Dimensions D<sup>2</sup>PAK**



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
Φ	0	-	8°
Ø1		5°	
Ø2		4°	
Ø3		4°	

**Technical Data  
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**Mechanical Dimensions ITO-220AB**



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
b3	1.20	1.30	1.45
b4	1.60	1.70	1.85
c	0.50	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e		2.55	
e1		5.10	
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
ΦP1(上□)	3.30	3.50	3.70
ΦP2(下□)	2.99	3.19	3.39
Q	2.50	2.70	2.90
θ1		5°	
θ2		4°	
θ3		10°	
θ4		5°	
θ5		5°	



**ST60120C**  
**STB60120C**  
**STF60120C**

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**Technical Data**  
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