



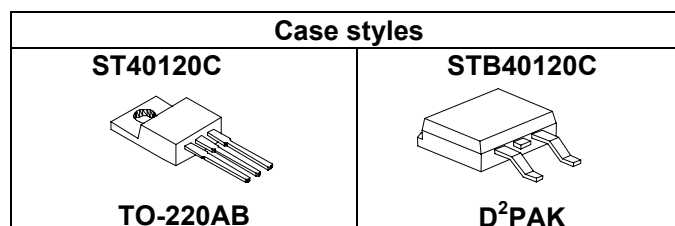
ST40120C/STB40120C SCHOTTKY RECTIFIER

Applications:

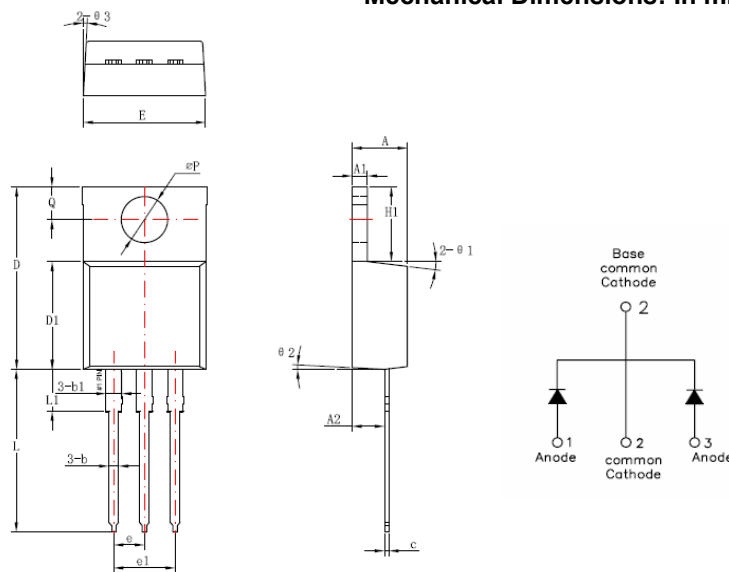
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Features:

- 150 °C T_J operation
- Center tap configuration
- 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
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

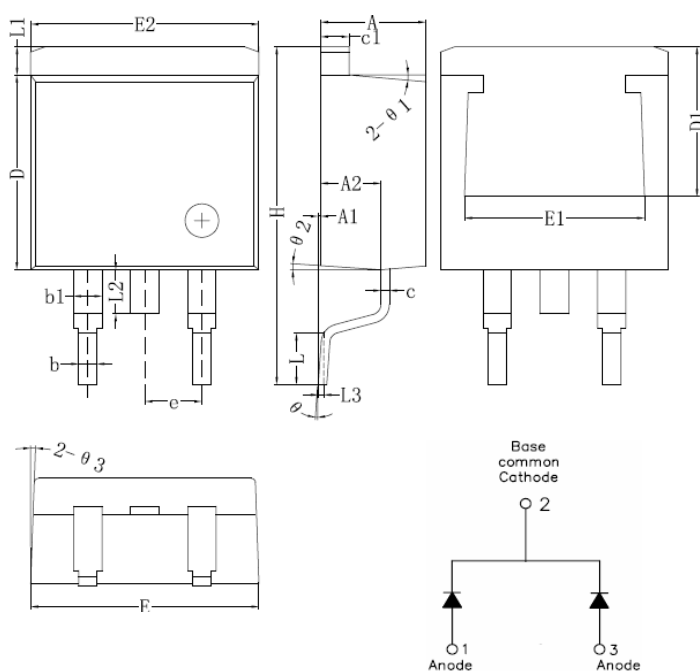


Mechanical Dimensions: In mm



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	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		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
$\theta 1$		7°	
$\theta 2$		3°	
$\theta 3$		4°	

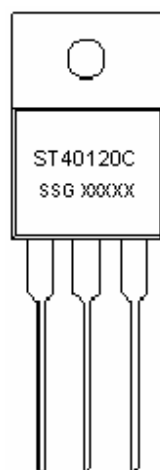
TO-220AB



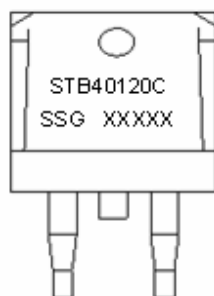
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

D²PAK

Marking Diagram:



ST40120C



STB40120C

Where XXXXX is YYWWL

ST = Device Type
 B = Package type
 40 = Forward Current (40A)
 120 = Reverse Voltage (120V)
 C = Configuration
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

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

Ordering Information:

Device	Package	Shipping
ST40120C	TO-220AB(Pb-Free)	50pcs / tube
STB40120C	D ² PAK(Pb-Free)	800pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	120	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 100^\circ\text{C}$, rectangular wave form	40	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	250	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V_{F1}	@ 5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.50	-	V
		@ 10A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.64	-	
		@ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.87	0.88	
	V_{F2}	@ 5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.46	-	V
		@ 10A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.57	-	
		@ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.68	0.71	
Reverse Current (per leg)	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	29	500	μA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	6	45	mA
Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	608	1000	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/ μs

* Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case(per leg)	$R_{\theta JC}$	DC operation	1.8	$^\circ\text{C/W}$
Approximate Weight	wt	-	2/1.85	g
Case Style	TO-220AB/ D ² PAK			



Figure 1
Typical Forward Characteristics

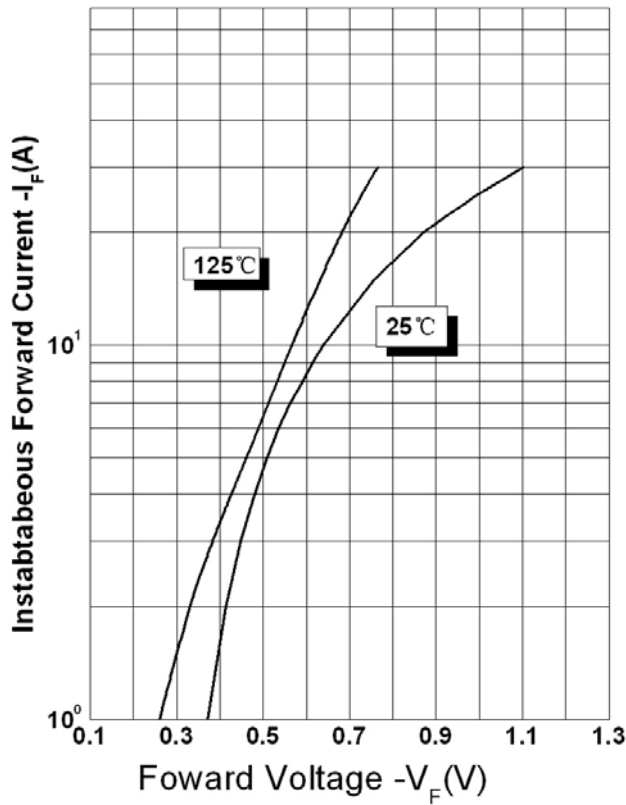


Figure 2
Typical Reverse Characteristics

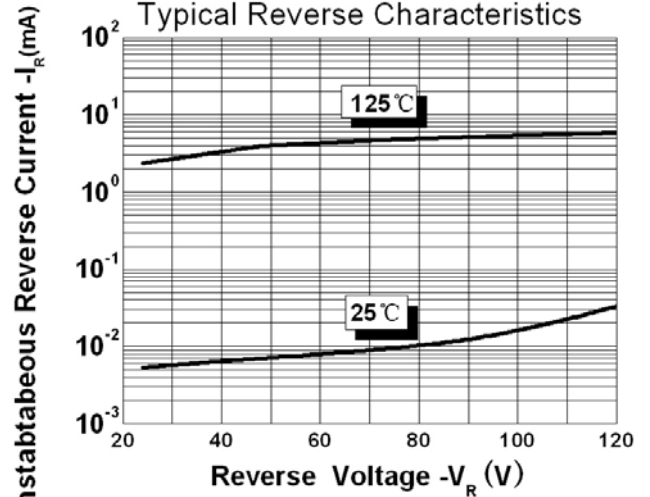
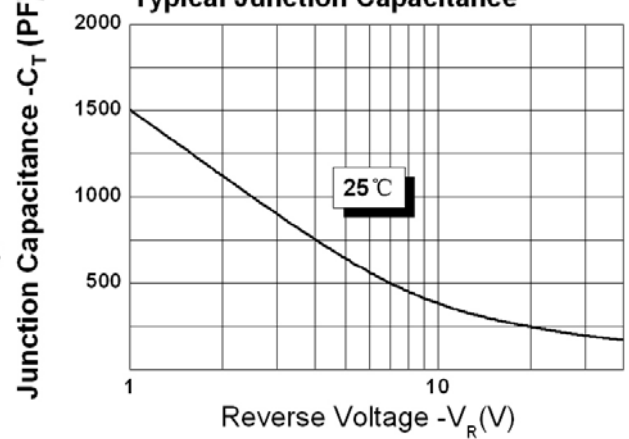


Figure 3
Typical Junction Capacitance





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