


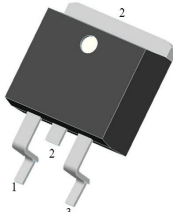

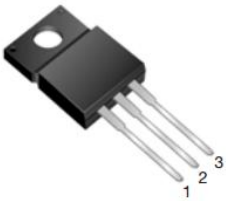
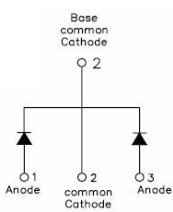
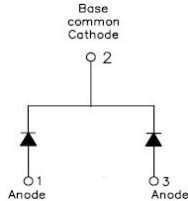
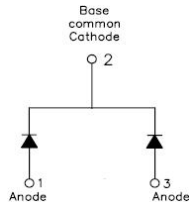
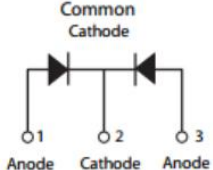
## ST1045C/STB1045C/STF1045C/STD1045C SCHOTTKY RECTIFIER

### Applications

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

### Features

- 150 °C T<sub>J</sub> 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

ST1045C	STB1045C	STD1045C	STF1045C
			
			
TO-220AB	D <sup>2</sup> PAK	DPAK	ITO-220AB

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	45	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> =80°C, rectangular wave form	5(Per Leg) 10(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	120	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V <sub>F1</sub>	@ 2.5A, Pulse, T <sub>J</sub> = 25°C @ 5A, Pulse, T <sub>J</sub> = 25°C	0.43 0.48	- 0.58	V
	V <sub>F2</sub>	@ 2.5A, Pulse, T <sub>J</sub> = 125°C @ 5A, Pulse, T <sub>J</sub> = 125°C	0.35 0.43	- 0.50	V
Reverse Current(Per Leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25°C	0.01	0.5	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125°C	4	15	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	280	-	pF

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

### Thermal-Mechanical Specifications:

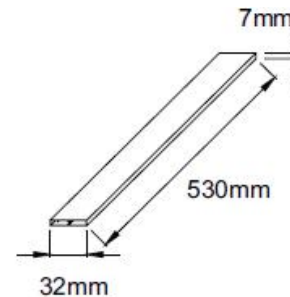
Characteristics	Symbol	ST1045C	STB1045C	STD1045C	STF1045C	Units
Junction Temperature	T <sub>J</sub>	-55 to +150				°C
Storage Temperature	T <sub>stg</sub>	-55 to +150				°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	3.5	3.5	2.6	6.5	°C/W

### Tube Specification

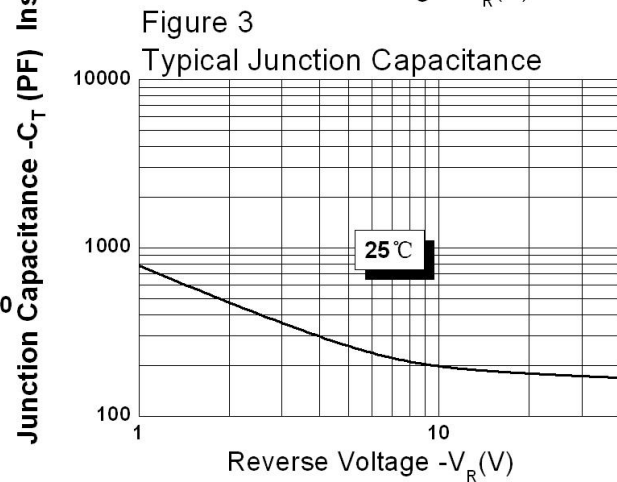
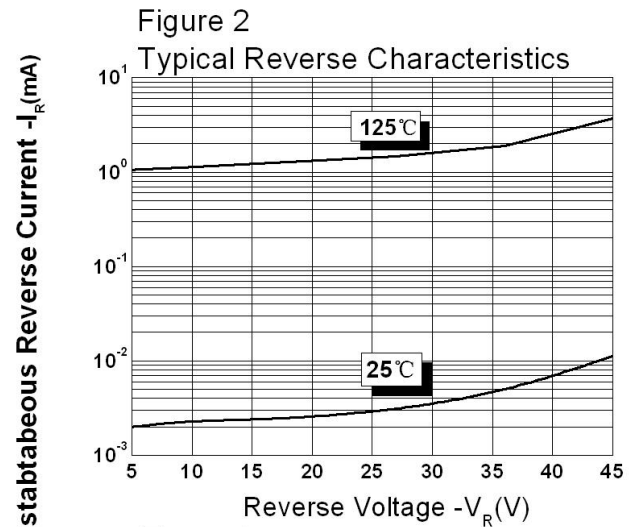
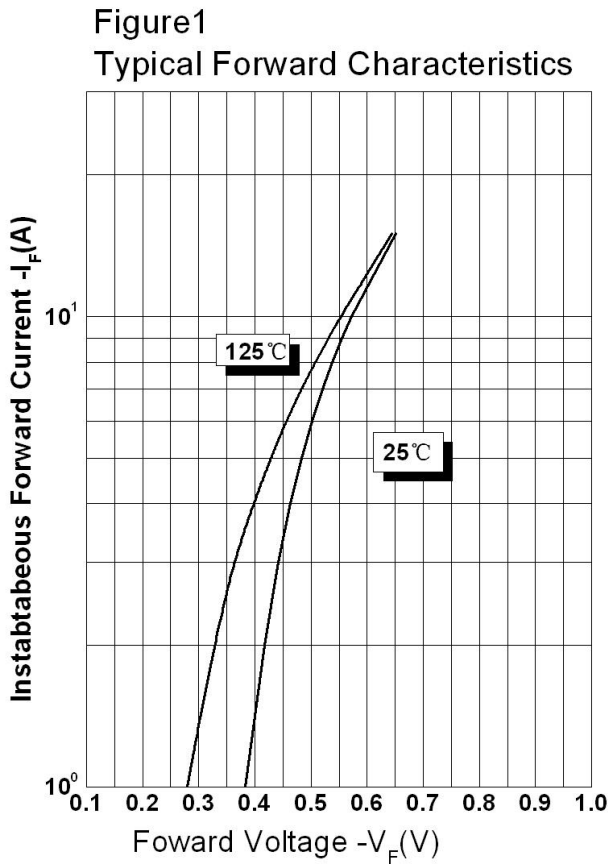
Device	Package	Weight	Shipping
ST1045C	TO-220AB	2.0	50pcs / tube
STB1045C	D <sup>2</sup> PAK	1.85	800pcs / reel
STD1045C	DPAK	0.39	2500pcs / reel
STF1045C	ITO-220AB	2.0	50pcs / tube

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

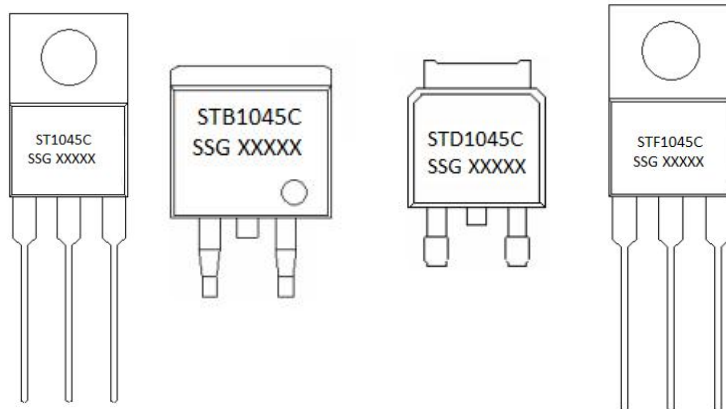
### Tube Specification(TO-220AB/ITO-220AB)



**Ratings and Characteristics Curves**



## Marking Diagram

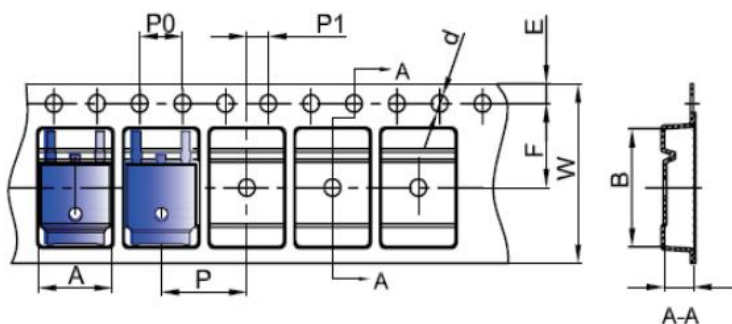


Where XXXXX is YYWWL

ST = Device Type  
B/D/F = Package type  
10 = Forward Current (10A)  
45 = Reverse Voltage (45V)  
C = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

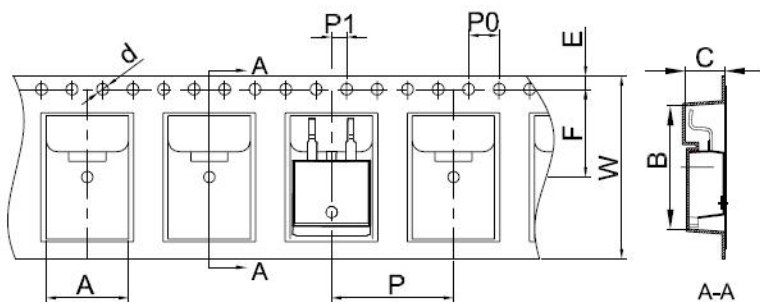
**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Carrier Tape Specification DPAK



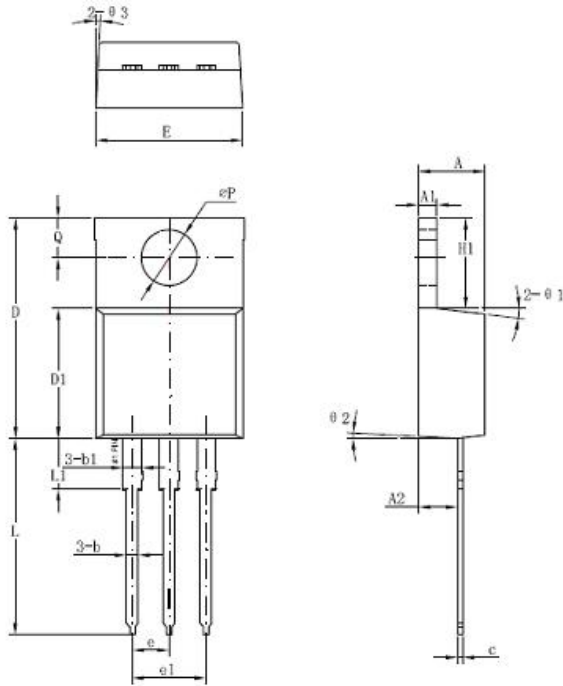
SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

## Carrier Tape Specification D2PAK



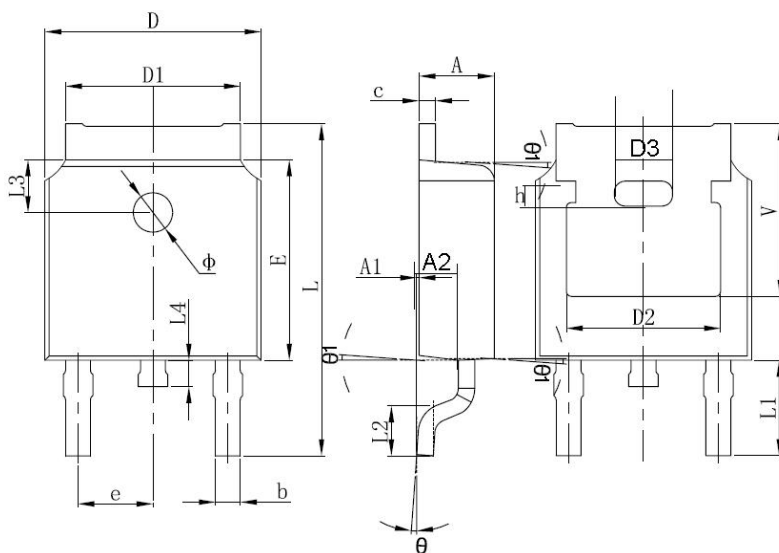
SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

**Mechanical Dimensions TO-220AB**



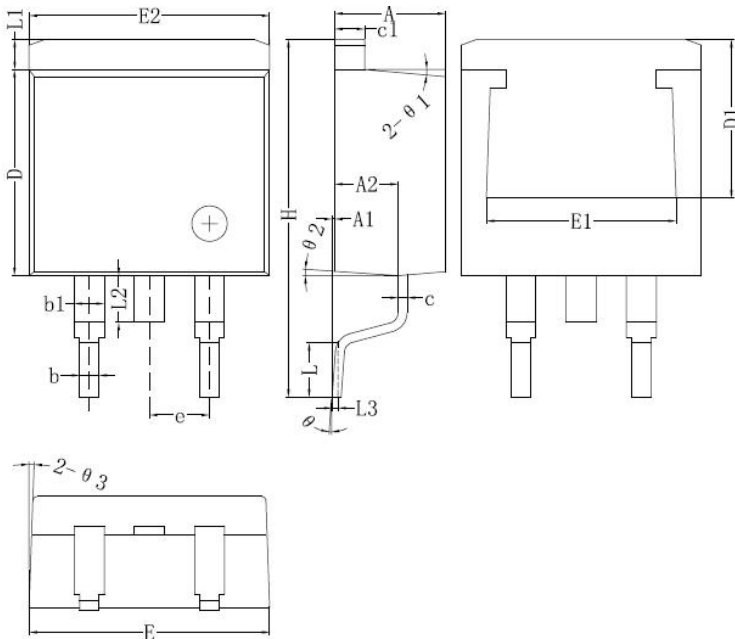
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

**Mechanical Dimensions DPAK**



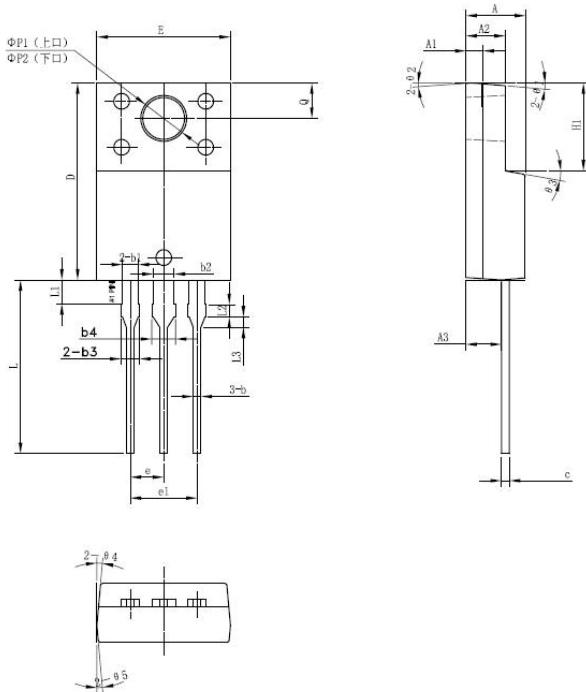
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
A1	0.00	0.127	0.000	0.005
b	0.66	0.86	0.026	0.034
c	0.46	0.60	0.018	0.024
D	6.50	6.70	0.256	0.264
D1	5.13	5.46	0.202	0.215
D2	4.83 REF.		0.190 REF.	
E	6.00	6.20	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.70	10.40	0.381	0.409
L1	2.90 REF.		0.144 REF.	
L2	1.40	1.70	0.055	0.067
L3	1.60 REF.		0.063 REF.	
L4	0.60	1.00	0.024	0.039
Φ	1.10	1.30	0.043	0.051
θ	0°	8°	0°	8°
h	0.00	0.30	0.000	0.012
V	5.35 REF.		0.211 REF.	

**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	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

**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(上口)	3.30	3.50	3.70
ΦP2(下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
Θ1		5°	
Θ2		4°	
Θ3		10°	
Θ4		5°	
Θ5		5°	



ST1045C  
STB1045C  
STD1045C  
STF1045C

**Technical Data**  
**Data Sheet N1029, Rev. B**



**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC - Sangdest Microelectronics (Nanjing) Co., Ltd sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC - Sangdest Microelectronics (Nanjing) Co., Ltd assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Schottky Diodes & Rectifiers](#) category:*

*Click to view products by [SMC Diode](#) manufacturer:*

Other Similar products are found below :

[MA4E2039](#) [MMBD301M3T5G](#) [HFA35HB60C](#) [RB160M-50TR](#) [D83C](#) [BAS16E6433HTMA1](#) [BAS 3010S-02LRH](#) [E6327](#) [BAT 54-02LRH](#)  
[E6327](#) [NRVBAF360T3G](#) [NSR05F40QNXT5G](#) [NTE555](#) [JANS1N6640](#) [SS3003CH-TL-E](#) [GA01SHT18](#) [CRS10I30A\(TE85L,QM](#)  
[MBRA140TRPBF](#) [MBRB30H30CT-1G](#) [BAT 15-04R](#) [E6152](#) [JANTX1N5712-1](#) [DMJ3940-000](#) [SB007-03C-TB-E](#) [NRVBB20100CTT4G](#)  
[NRVBM120LT1G](#) [NTSB30U100CT-1G](#) [CRG04\(T5L,TEMQ\)](#) [ACDBA1100LR-HF](#) [ACDBA1200-HF](#) [ACDBA240-HF](#) [ACDBA3100-HF](#)  
[CDBQC0530L-HF](#) [ACDBA260LR-HF](#) [ACDBA1100-HF](#) [10BQ015-M3/5BT](#) [NRVBM120ET1G](#) [VSSB410S-M3/5BT](#) [1N5819T-G](#)  
[PDS1040Q-13](#) [B160BQ-13-F](#) [SDM05U20CSP-7](#) [BAS 70-07](#) [E6433](#) [B140S1F-7](#) [HSM560Je3/TR13](#) [DDB2265-000](#) [ZHCS506QTA](#)  
[HSM190Je3/TR13](#) [B330AF-13](#) [ACDBUC0230-HF](#) [SDM1U100S1F-7](#) [MBR10200CTF-G1](#) [CDLL5712](#)