SANGDEST MICROELECTRONICS

Technical Data
Data Sheet N1359, Rev. -

Green Products

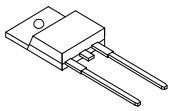
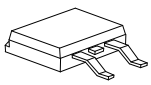
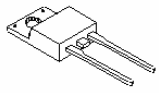
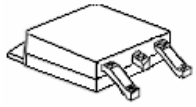
ST8120/STB8120/STF8120/STD8120
SCHOTTKY RECTIFIER

Applications:

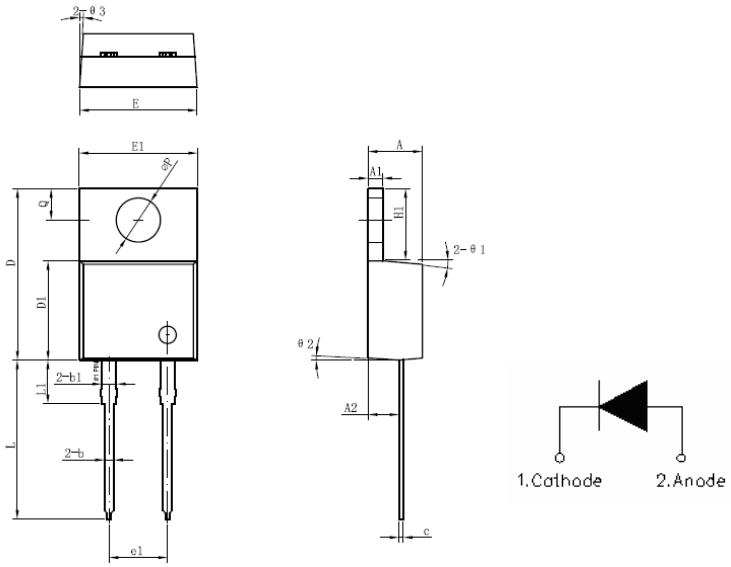
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

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

Case styles			
ST8120	STB8120	STF8120	STD8120
			
TO-220AC	D^2PAK	ITO-220AC	DPAK

Mechanical Dimensions: In Inches / mm



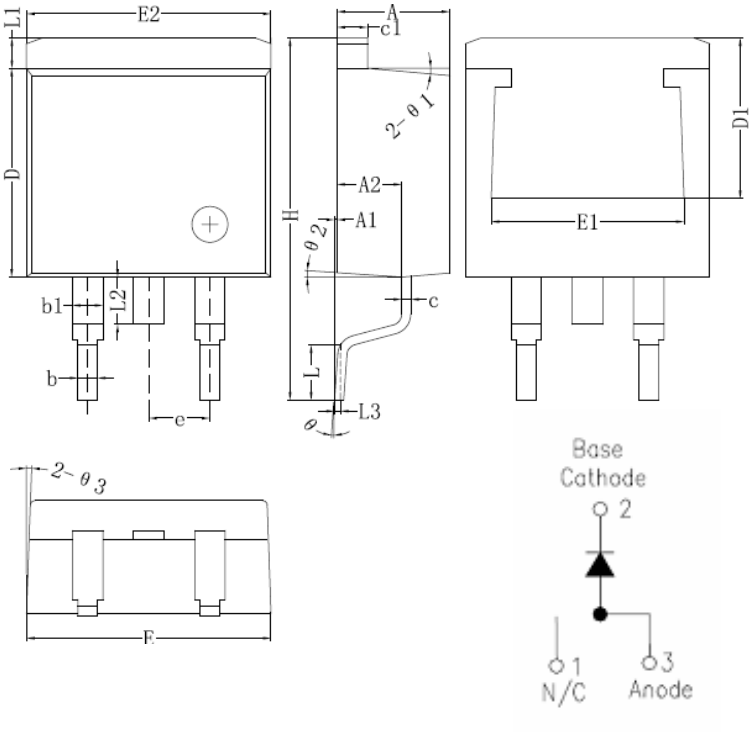
TO-220AC

Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
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	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		5°	
Θ2		4°	
Θ3		4°	

• Weiqi Street, Airport Development Zone, Jiangning District, Nanjing, China 211113 (86) 25-87123907 •
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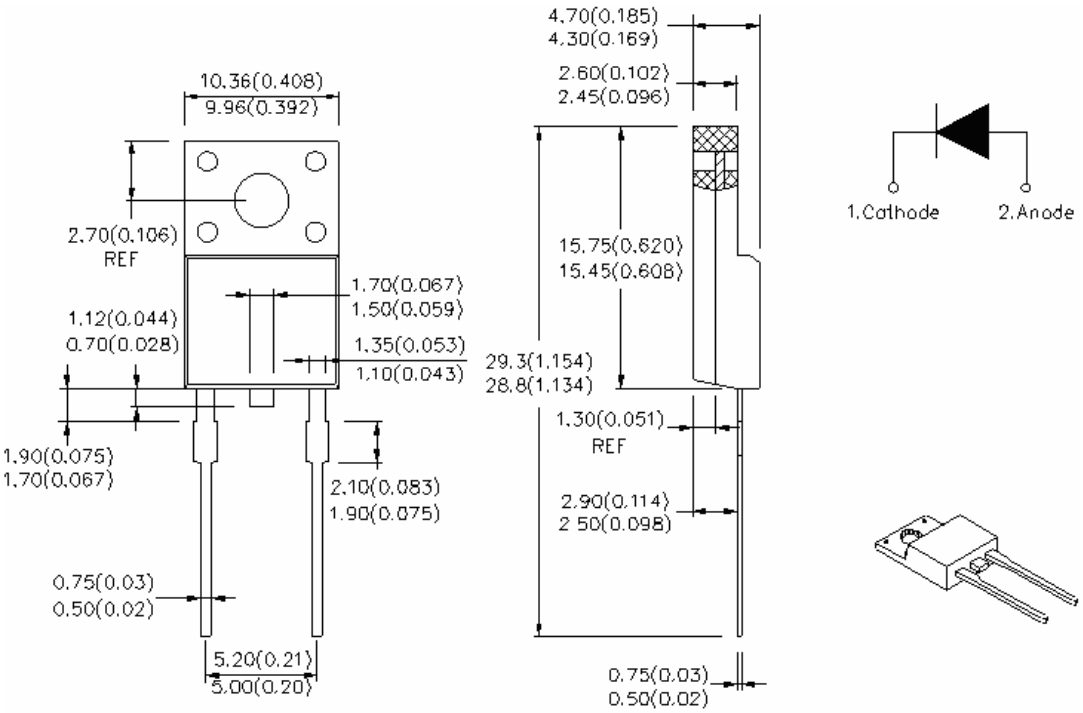
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

D^2PAK

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MICROELECTRONICS

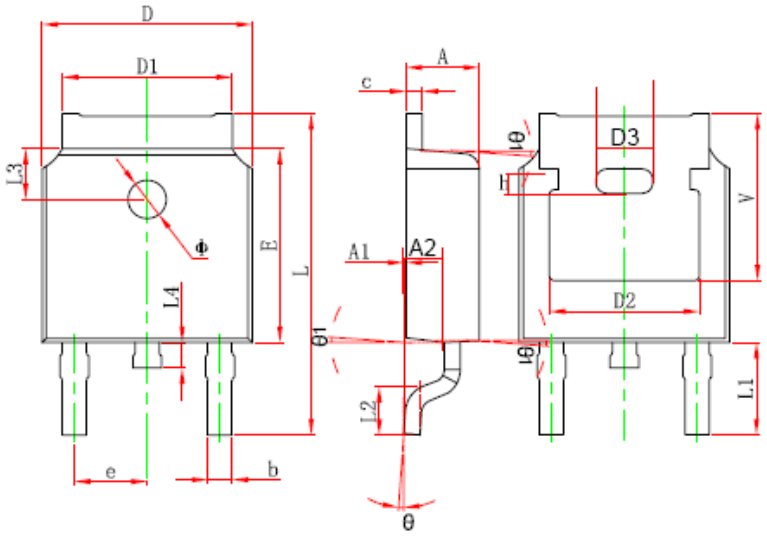
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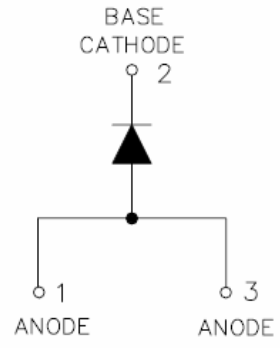


ITO-220AC

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Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
A2	0.910	1.110	0.036	0.044
V	5.350 REF.		0.211 REF.	
D3	1.778REF.		0.070REF.	
h	0.762REF.		0.030REF.	
θ1	7°		7°	

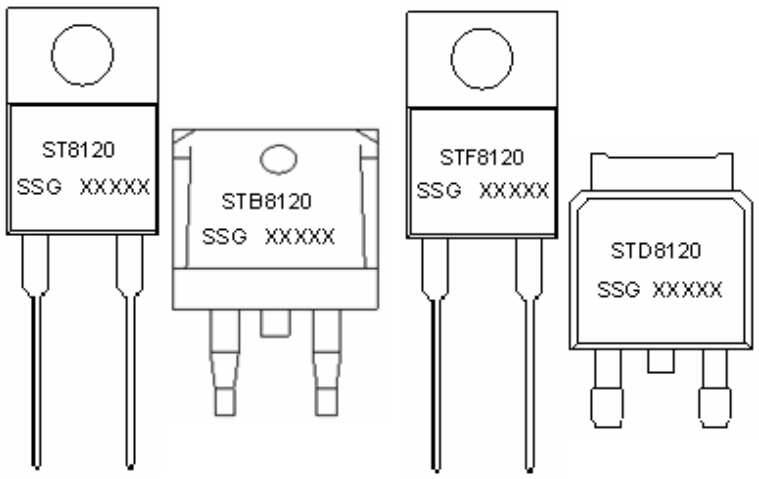


DPAK

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Marking Diagram:



ST8120 STB8120 STF8120 STD8120

Where XXXXX is YYWWL

ST	= Device Type
B/F/D	= Package type
8	= Forward Current (8A)
120	= Reverse Voltage (120V)
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

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

Ordering Information:

Device	Package	Shipping
ST8120	TO-220AC(Pb-Free)	50pcs / tube
STB8120	D^2 PAK(Pb-Free)	800pcs / reel
STF8120	ITO-220AC(Pb-Free)	50pcs / tube
STD8120	DPAK(Pb-Free)	2500pcs / 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℃, rectangular wave form	8	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	130	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 8A, Pulse, T_J = 25 °C	0.88	V
	V_{F2}	@ 8A, Pulse, T_J = 125 °C	0.71	V
Reverse Current*	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.6	mA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	40	mA
Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	450	pF
Voltage Rate of Change	dv/dt	-	10,000	V/µs

* Pulse Width < 300µs, Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	ST8120	STB8120	STD8120	STF8120	Units
Junction Temperature	T_J	-55 to +150				°C
Storage Temperature	T_{stg}	-55 to +150				°C
Maximum Thermal Resistance Junction to Case(per leg)*	$R_{\theta JC}$	2.8	2.8	2.0	5.5	°C/W
Approximate Weight	wt	1.8	1.85	0.39	1.8	g
Case Style	TO-220AC/ D^2PAK/ DPAK/ ITO-220AC					

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