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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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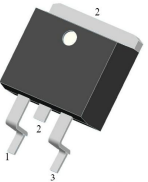
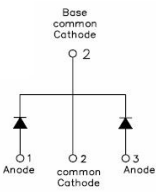
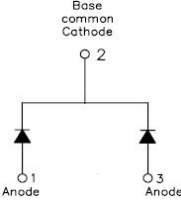
## 12CTQ.../12CTQ...S SCHOTTKY RECTIFIER

### Features

- 175 °C T<sub>J</sub> operation
- Center tap configuration
- Low 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

### Applications

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

12CTQ...	12CTQ...S
	
	
TO-220AB	D <sup>2</sup> PAK

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	35(12CTQ035)	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	-	40(12CTQ040)	
DC Blocking Voltage	V <sub>R</sub>	-	45(12CTQ045)	
Average Rectified Forward Current	I <sub>F (AV)</sub>	50% duty cycle @T <sub>c</sub> =105°C, rectangular wave form	6(per leg) 12(per device)	A
Peak One Cycle Non-Repetitive Surge Current(per leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	160	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg)*	V <sub>F1</sub>	@ 6A, Pulse, T <sub>J</sub> = 25 °C @ 12A, Pulse, T <sub>J</sub> = 25 °C	0.54 0.62	0.60 0.73	V
	V <sub>F2</sub>	@ 6A, Pulse, T <sub>J</sub> = 125 °C @ 12A, Pulse, T <sub>J</sub> = 125 °C	0.46 0.55	0.53 0.64	V
Reverse Current (per leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.004	0.8	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	5	7.0	mA
Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>sig</sub> = 1MHz	360	400	pF
Series Inductance (per leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

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

### Thermal-Mechanical Specifications:

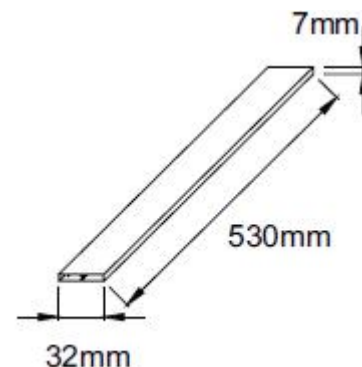
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case(per leg)	R <sub>θJC</sub>	DC operation	3.5	°C/W
Typical Thermal Resistance, case to Heat Sink	R <sub>θCS</sub>	Mounting surface, smooth and greased	0.50	°C/W
Case Style	TO-220AB D <sup>2</sup> PAK			

### Tube Specification

Device	Package	Weight	Shipping
12CTQ...	TO-220AB	1.8g	50pcs / tube
12CTQ...S	D <sup>2</sup> PAK	1.85g	800pcs / reel

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

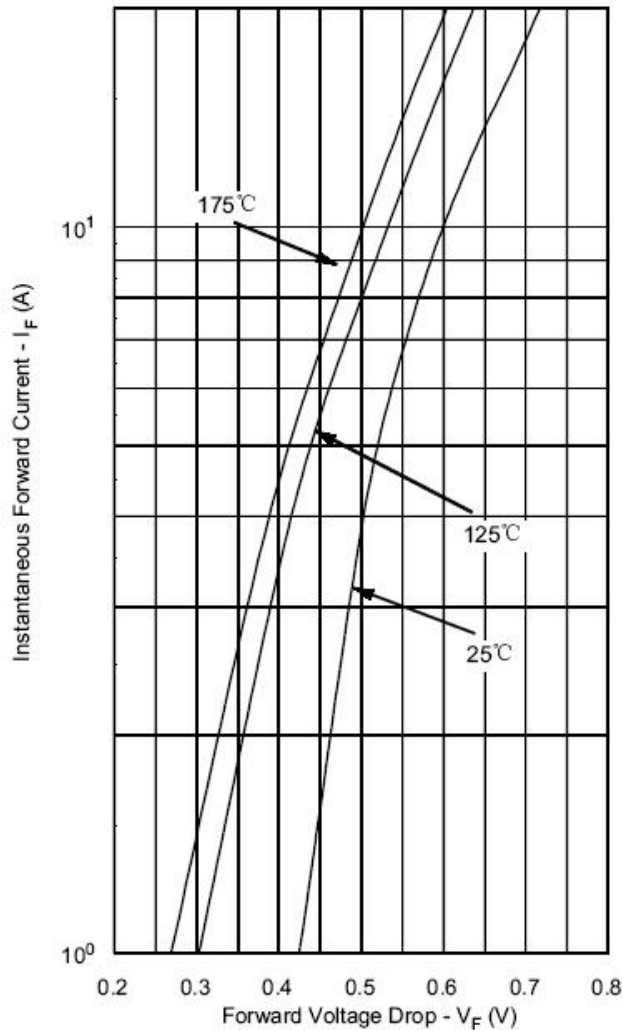
### Tube Specification(TO-220AB)



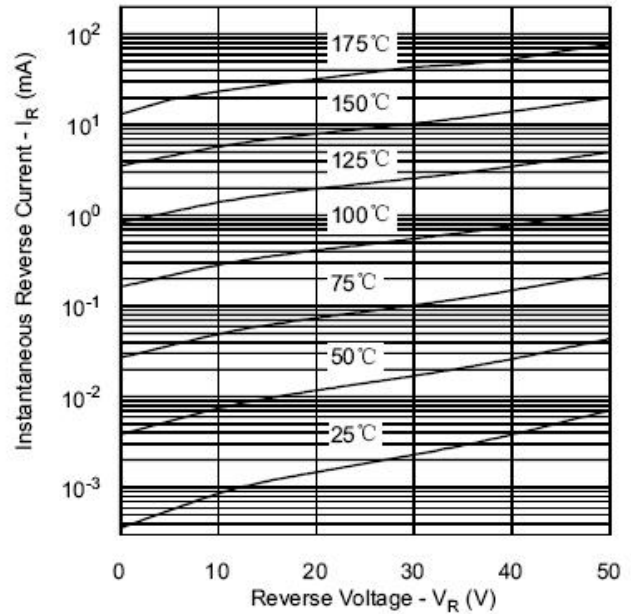


## Ratings and Characteristics Curves

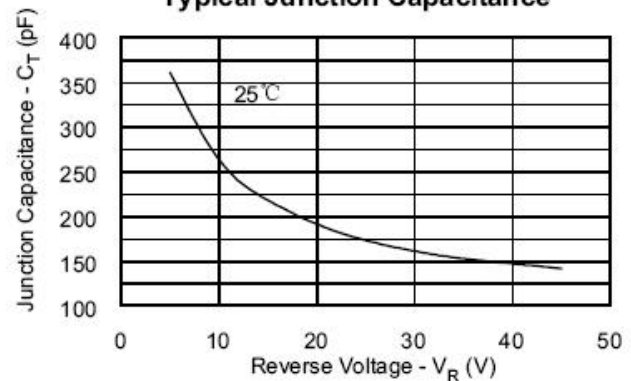
**Typical Forward Characteristics**



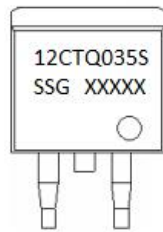
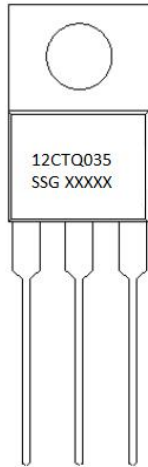
**Typical Reverse Characteristics**



**Typical Junction Capacitance**



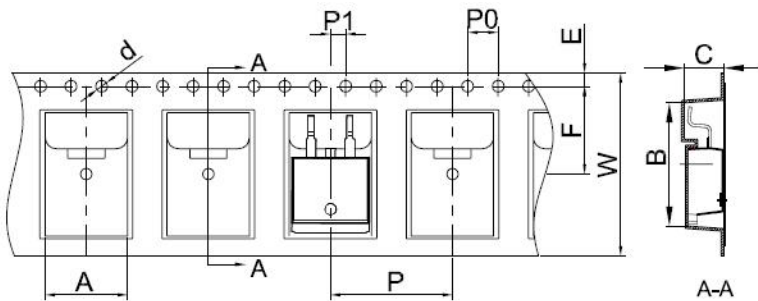
## Marking Diagram



Where XXXXX is YYWWL

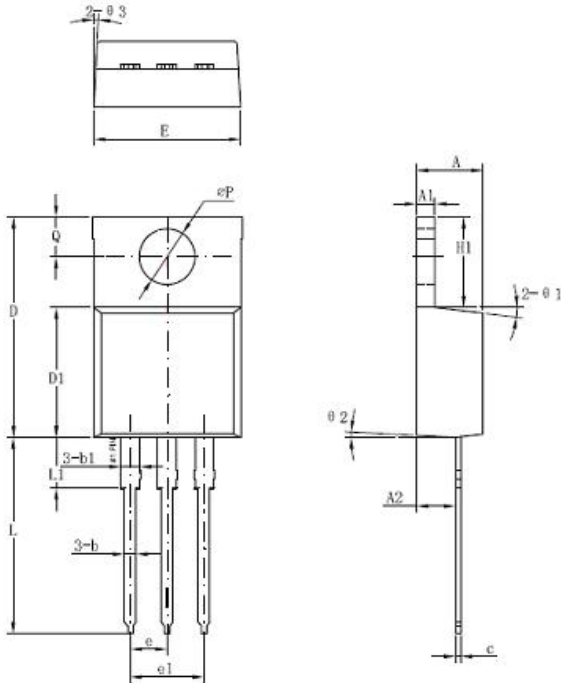
12CTQ035/S = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

## Carrier Tape Specification D<sup>2</sup>PAK



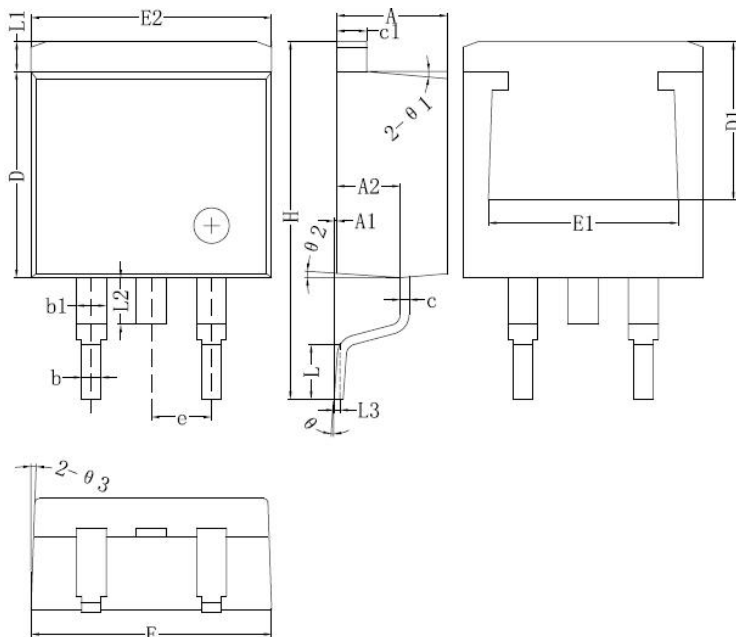
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

## Mechanical Dimensions TO-220AB



Symbol	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
$\Phi P$	3.74	3.84	4.04
Q	2.54	2.74	2.94
$\theta 1$		7°	
$\theta 2$		3°	
$\theta 3$		4°	

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



Symbol	Millimeters		
	Min.	Typical	Max.
A	4.47	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	1.17	1.27	1.37
c	0.31	0.38	0.61
c1	1.17	1.27	1.37
D	8.50	8.70	8.90
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.31
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.74
L1	1.12	1.27	1.42
L2	1.30		2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

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