



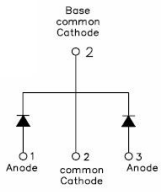
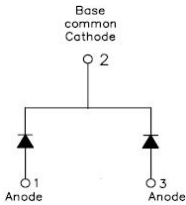
12CTQ.../12CTQ...S SCHOTTKY RECTIFIER

Features

- 175 °C T_J 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 ² PAK

Maximum Ratings:

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

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg)*	V _{F1}	@ 6A, Pulse, T _J = 25 °C @ 12A, Pulse, T _J = 25 °C	0.54 0.62	0.60 0.73	V
	V _{F2}	@ 6A, Pulse, T _J = 125 °C @ 12A, Pulse, T _J = 125 °C	0.46 0.55	0.53 0.64	V
Reverse Current (per leg)*	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.004	0.8	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	5	7.0	mA
Junction Capacitance (per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	360	400	pF
Series Inductance (per leg)	L _S	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:

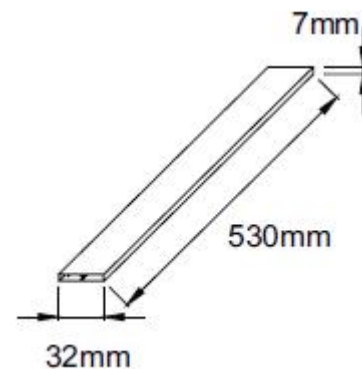
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +175	°C
Storage Temperature	T _{stg}	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case(per leg)	R _{θJC}	DC operation	3.5	°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth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

Tube Specification

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

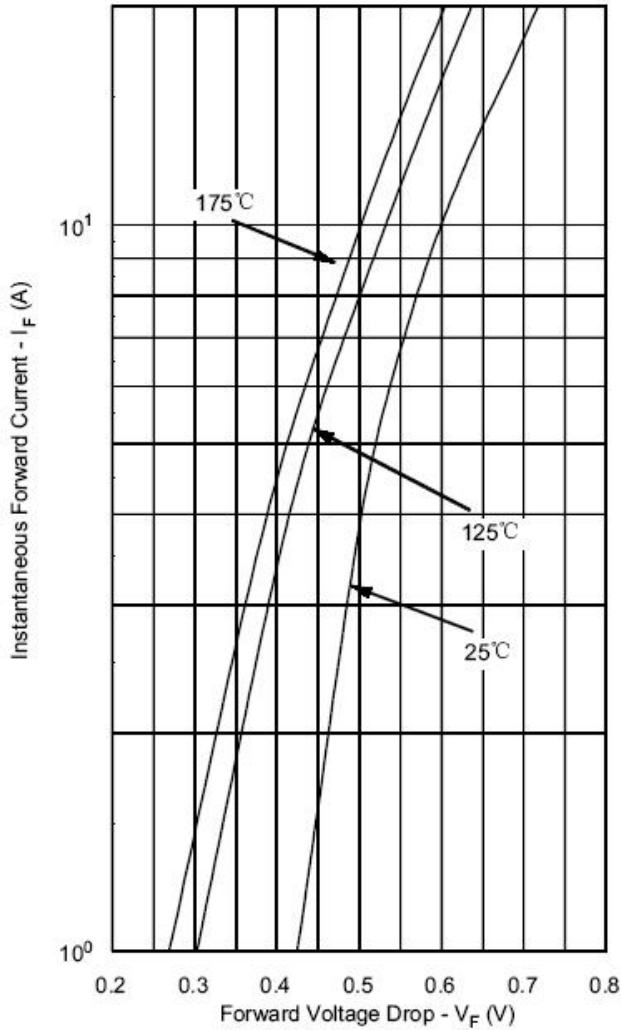
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Tube Specification(TO-220AB)

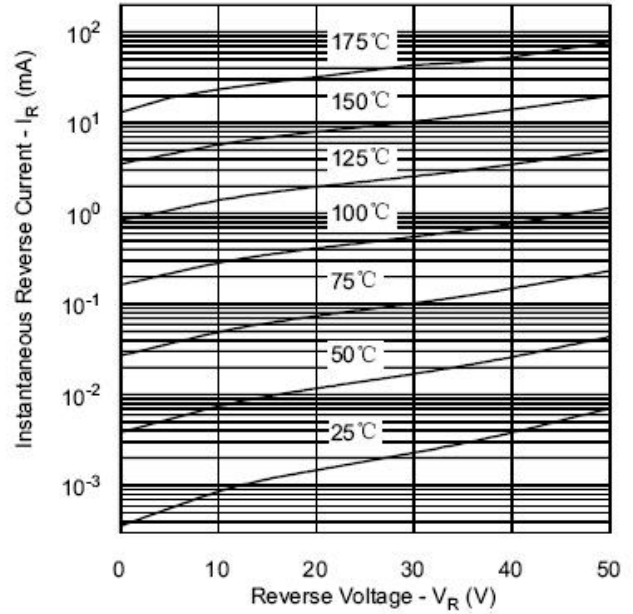


Ratings and Characteristics Curves

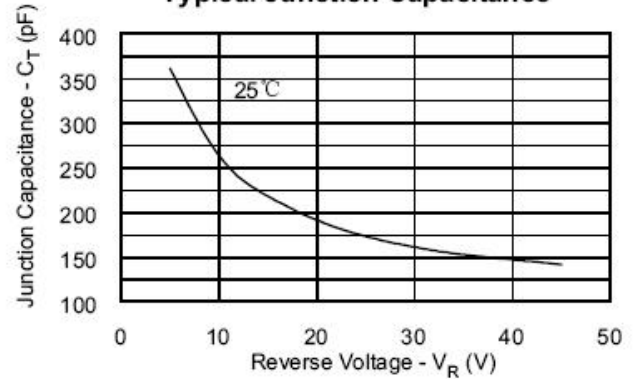
Typical Forward Characteristics



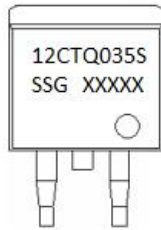
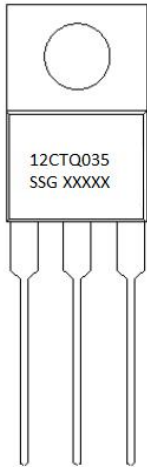
Typical Reverse Characteristics



Typical Junction Capacitance



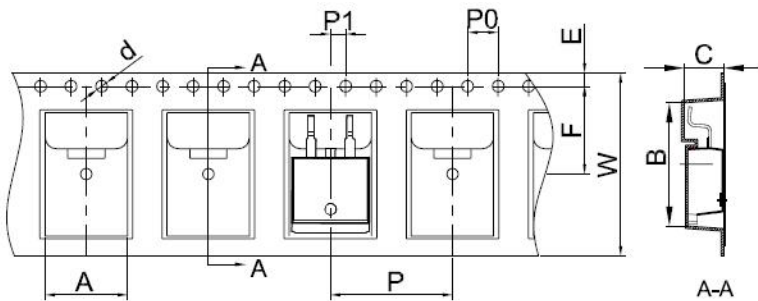
Marking Diagram



Where XXXXX is YYWWL

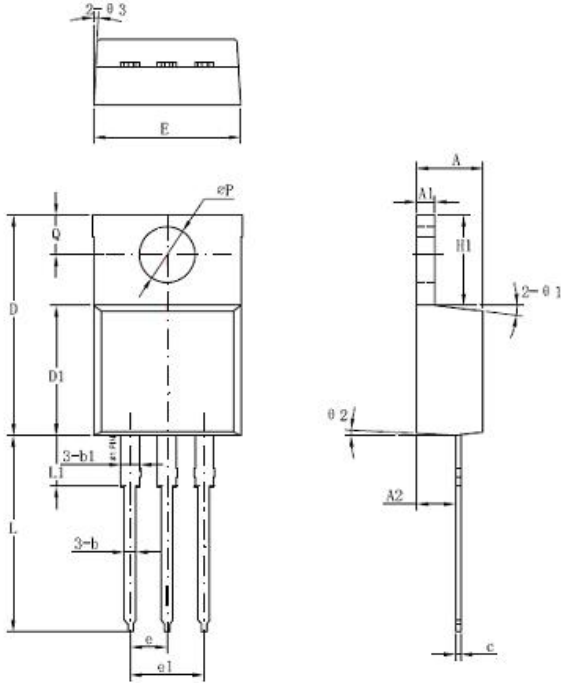
12CTQ035/S = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Carrier Tape Specification D²PAK



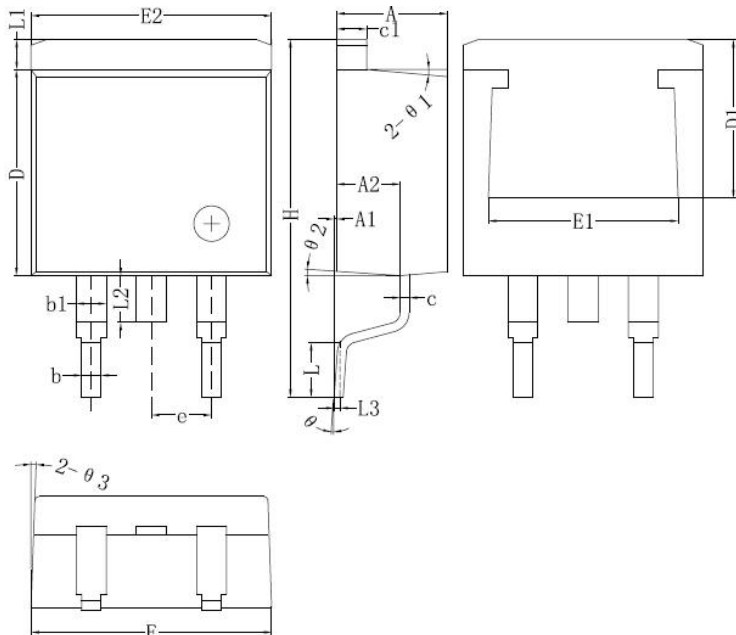
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

Mechanical Dimensions TO-220AB



Symbol	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 D²PAK



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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