



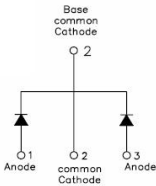
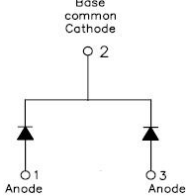
12CTQ.../12CTQ...S SCHOTTKY RECTIFIER

Features

- 150 °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
- Terminals finish: 100% Pure Tin
- 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@T_c=25°C unless otherwise specified

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V _{RRM}	-	30(12CTQ030)	V
Working Peak Reverse Voltage	V _{RWM}	-	35(12CTQ035)	
DC Blocking Voltage	V _R	-	40(12CTQ040) 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	0.49 0.58	0.60 0.73	V
	V _{F2}	@ 6A, Pulse, T _J = 125 °C @ 12A, Pulse, T _J = 125 °C	0.42 0.54	0.53 0.64	V
Reverse Current (per leg)*	I _{R1}	@V _R = rated V _R T _J = 25 °C	0.02	0.8	mA
	I _{R2}	@V _R = rated V _R T _J = 125 °C	9	15	mA
Junction Capacitance (per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	320	400	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

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

Thermal-Mechanical Specifications:

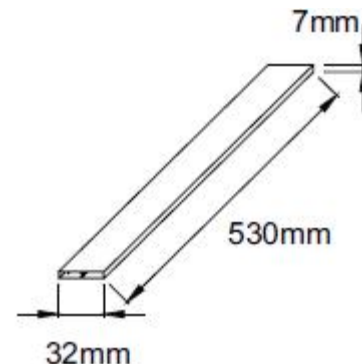
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +150	°C
Storage Temperature	T _{stg}	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case(per leg)	R _{θJC}	DC operation	3.5	°C/W
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth 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

Figure 1 Typical Forward Characteristics

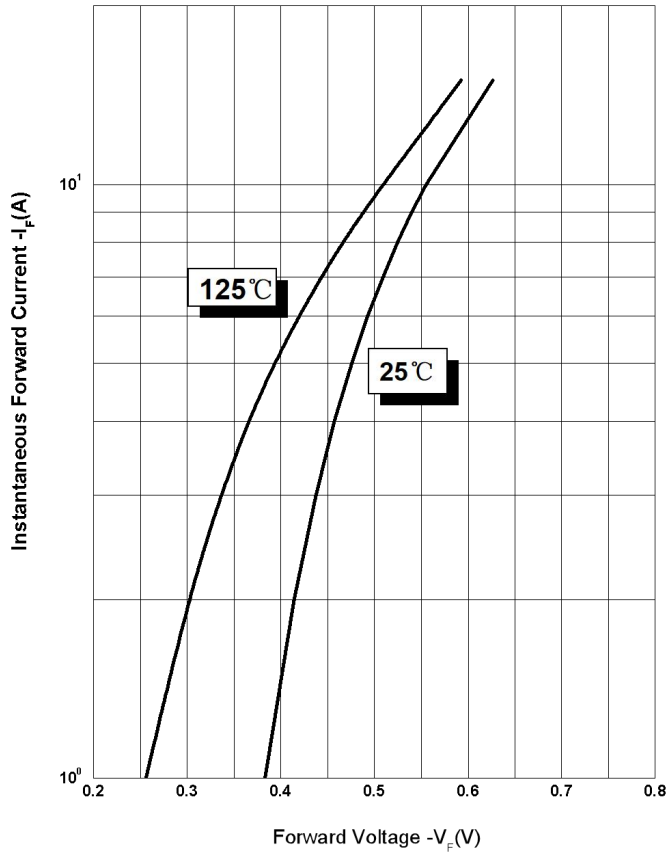


Figure 2 Typical Reverse Characteristics

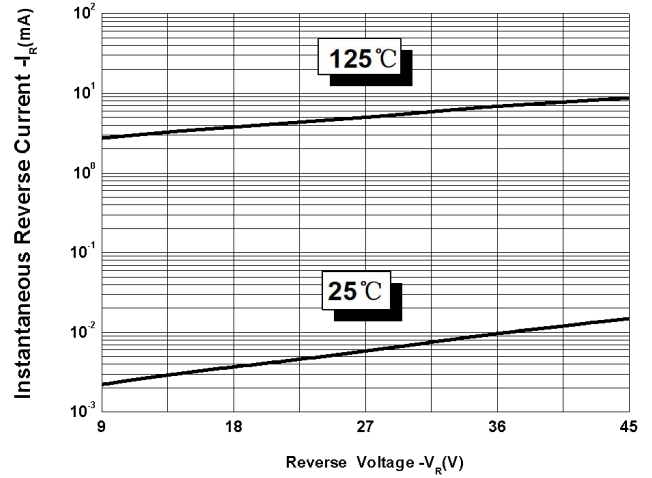
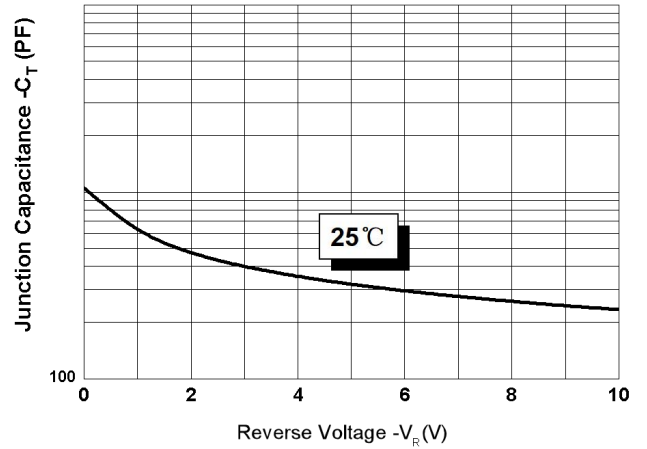
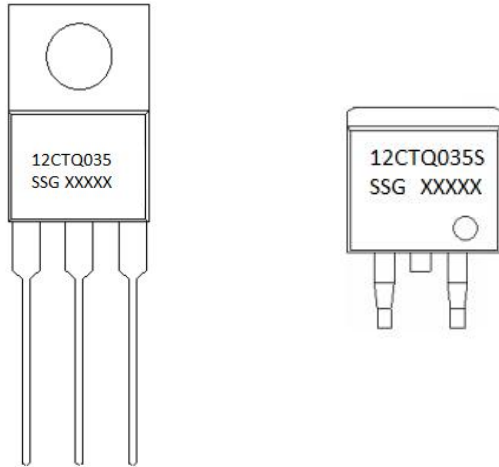


Figure 3 Typical Junction Capacitance



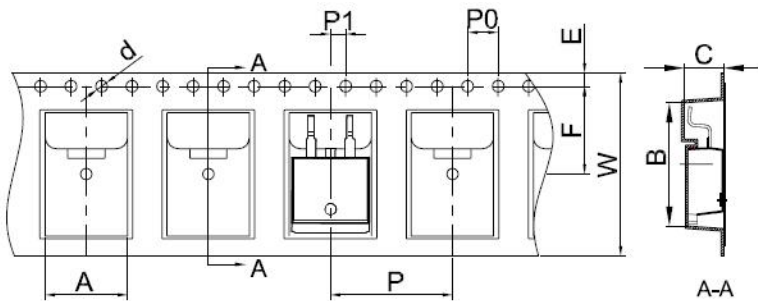
Marking Diagram



Where XXXXX is YYWWL

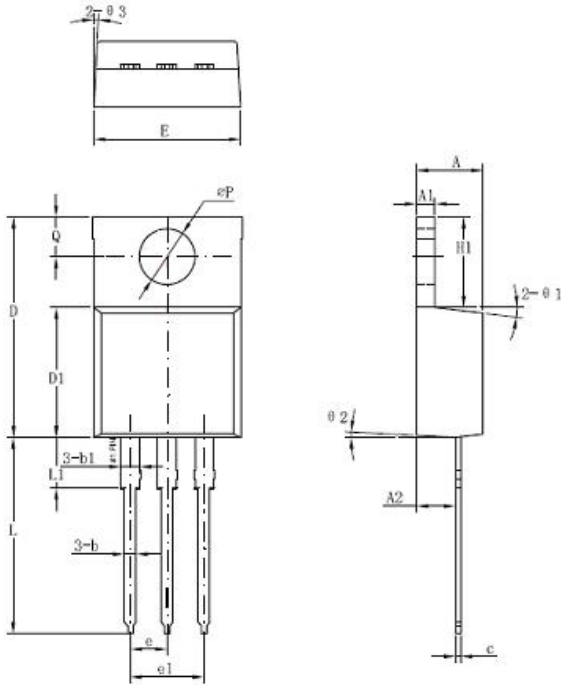
12CTQ035/S = Part Name
SSG = SSG
YY = Year
WW = Week
L = Lot Number

Carrier Tape Specification D²PAK



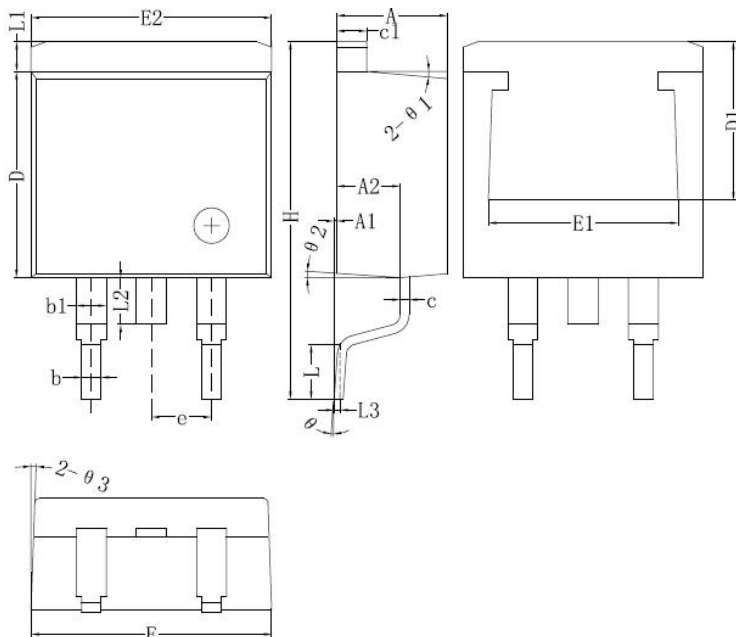
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

Mechanical Dimensions TO-220AB



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	3.56	-	4.83
A1	0.51	-	1.4
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	9.65	-	10.67
e	-	2.54	-
e1	-	5.08	-
H1	5.84	-	6.86
L	12.7	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-
Q	2.54	-	3.43

Mechanical Dimensions D²PAK



Symbol	Dimensions in millimeters	
	Min.	Max.
A	4.06	4.83
A1	0	0.26
b	0.51	0.99
b1	1.14	1.78
c	0.31	0.74
c1	1.14	1.65
D	8.38	9.65
D1	6.4	
E1	6.22	
E2	9.65	10.67
e	2.54BSC	
H	14.6	15.88
L	1.78	2.8
L1	-	1.68
L2	-	2.2
L3	0.255BSC	
Θ	0	8°



12CTQ030/035/040/045
12CTQ030/035/040/045/S

Technical Data
Data Sheet N1066, Rev. B



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