Technical Data
Data Sheet N1066, Rev. -

Green Products

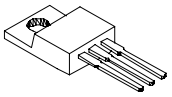
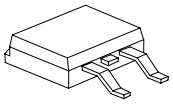
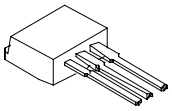
12CTQ…/12CTQ…S /12CTQ…-1
SCHOTTKY RECTIFIER

Applications:

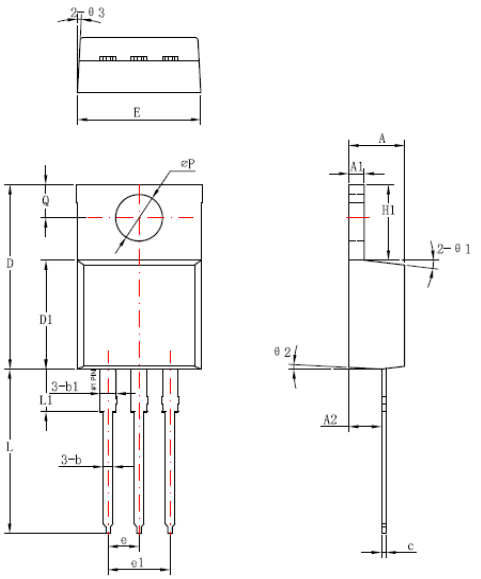
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

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

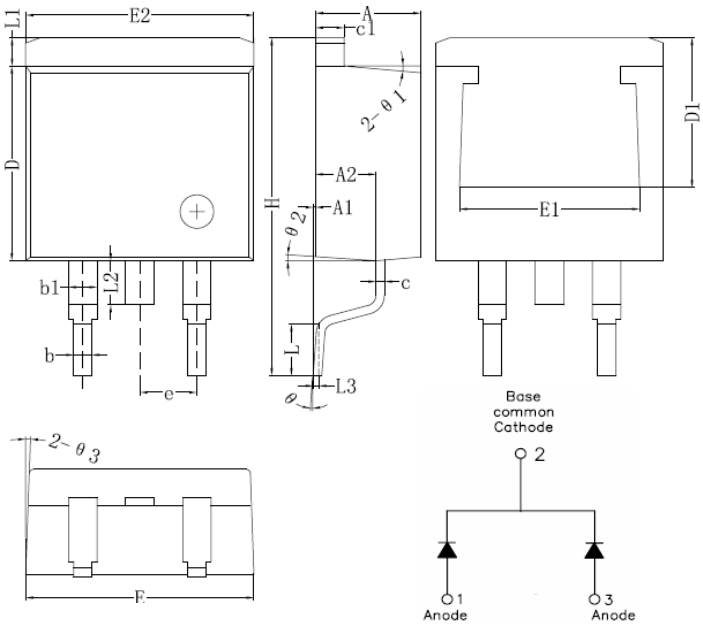
Case styles		
12CTQ…	12CTQ…S	12CTQ…-1
		
TO-220AB	D^2PAK	TO-262

Mechanical Dimensions: In Inches / mm



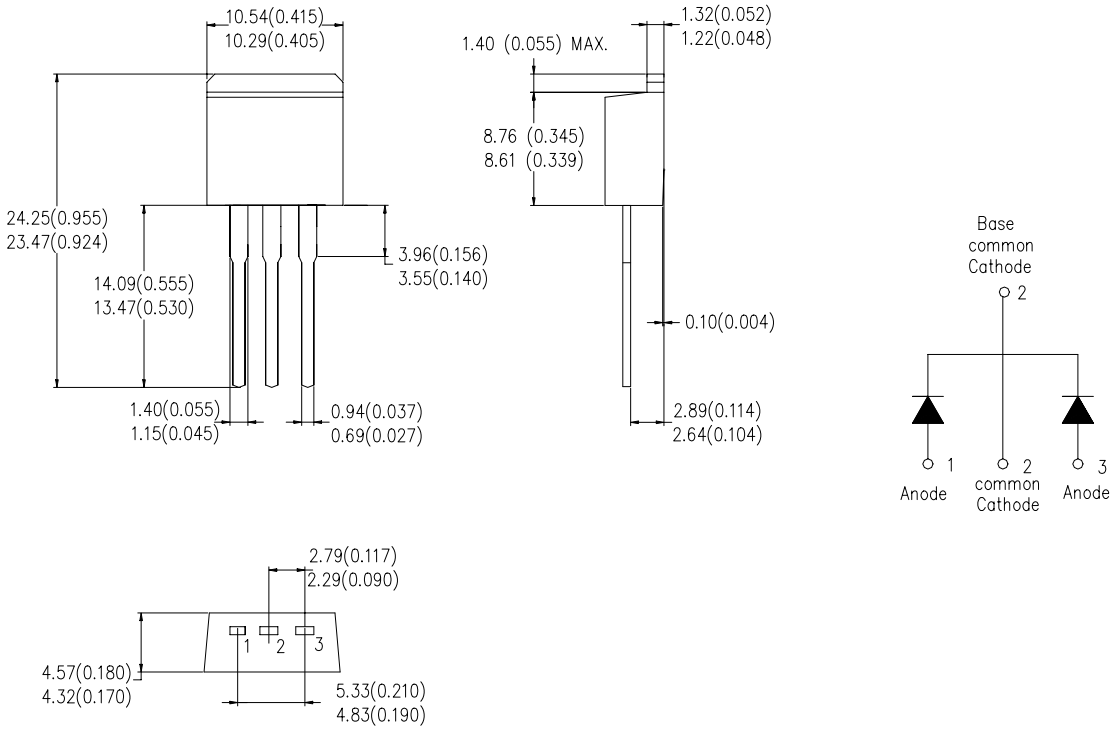
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		7°	
Θ2		3°	
Θ3		4°	

TO-220AB



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°	

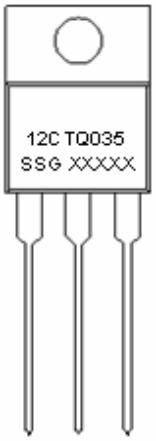
D^2PAK



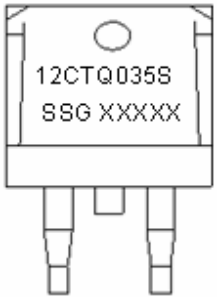
TO-262

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Marking Diagram:



12CTQ035



12CTQ035S

Where XXXXX is YYWWL

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

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

Ordering Information:

Device	Package	Shipping
12CTQ…	TO-220AB (Pb-Free)	50pcs / tube
12CTQ…S	D^2 PAK (Pb-Free)	800pcs / 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}	-	35(12CTQ035) 40(12CTQ040) 45(12CTQ045)	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @T_C =105°C, rectangular wave form	6(per leg) 12(per device)	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	160	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	V_{F1}	@ 6A, Pulse, T_J = 25 °C @ 12A, Pulse, T_J = 25 °C	0.60 0.73	V
	V_{F2}	@ 6A, Pulse, T_J = 125 °C @ 12A, Pulse, T_J = 125 °C	0.53 0.64	V
Max. Reverse Current at DC condition	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.8	mA
Max. Reverse Current	I_{R2}	@V_R = rated V_R T_J = 125 °C	7.0	mA
Max. Junction Capacitance	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	400	pF
Typical Series Inductance	L_S	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change(Rated V_R)	dv/dt	-	10,000	V/μs

* Pulse Width < 300μs, Duty Cycle <2%

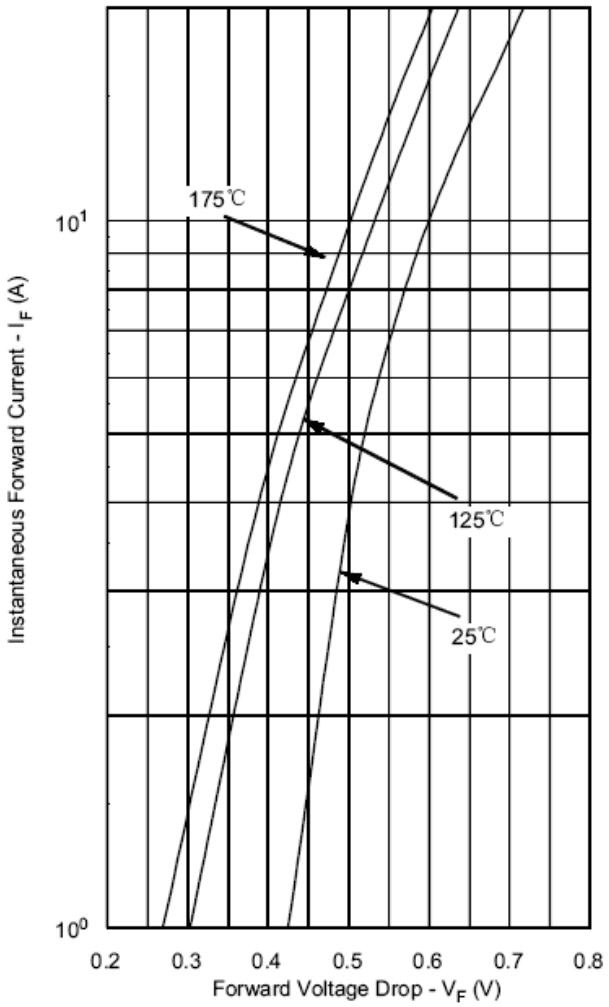
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +175	°C
Max. Storage Temperature	T_{stg}	-	-55 to +175	°C
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	3.50	°C/W
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2/1.85	g
Case Style	TO-220AB,D^2PAK,TO-262(Suffix"s"for D^2PAK; Suffix"-1"for TO-262)			

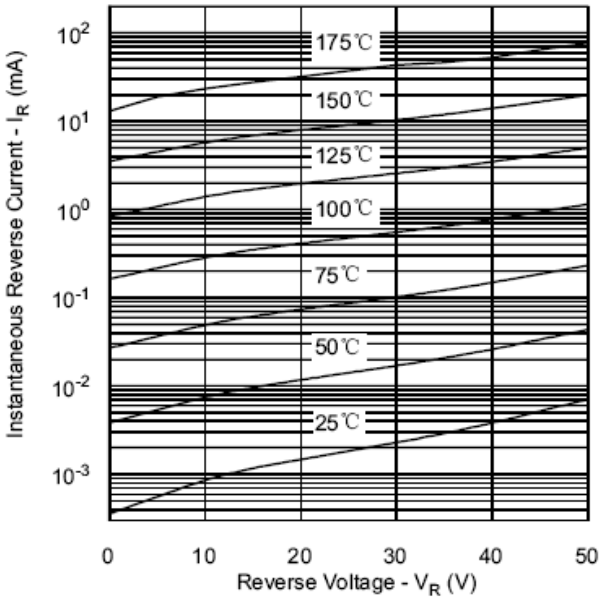
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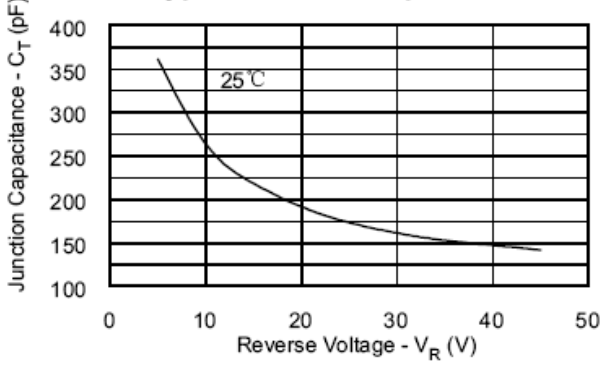
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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