




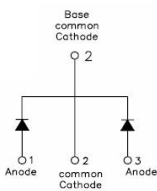
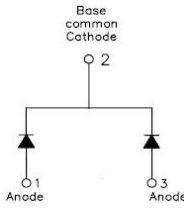
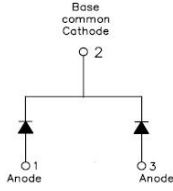
42CTQ030 /42CTQ030S /42CTQ030-1 SCHOTTKY RECTIFIER

Features

- 150°C T_J operation
- 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

42CTQ030	42CTQ030S	42CTQ030-1
		
		
TO-220AB	D ² PAK	TO-262

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V _{RRM}	-	30	V
Working Peak Reverse Voltage	V _{RWM}			
DC Blocking Voltage	V _R			
Average Rectified Forward Current	I _{F (AV)}	50% duty cycle @T _c =121°C, rectangular wave form	20(Per Leg) 40(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I _{FSM}	8.3ms, Half Sine pulse, T _c = 25 °C	432	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	V_{F1}	@ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.43	0.50	V
		@ 40A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.48	0.59	V
	V_{F2}	@ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.31	0.38	V
		@ 40A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.39	0.51	V
Reverse Current (Per Leg)*	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	0.2	3	mA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	170	183	mA
Junction Capacitance(Per Leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	1900	2840	pF
Typical 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:

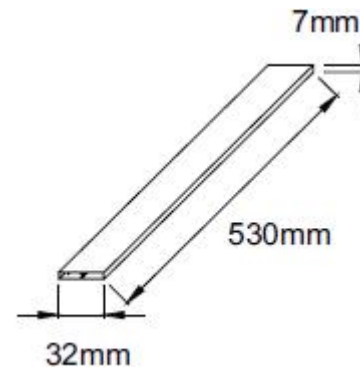
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	3.25	$^\circ\text{C/W}$
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta JS}$	DC operation	0.50	$^\circ\text{C/W}$
Case Style	TO-220AB D ² PAK TO-262			

Tube Specification

Device	Package	Weight	Shipping
42CTQ030	TO-220AB	1.8g	50pcs / tube
42CTQ030S	D ² PAK	1.85g	800pcs / reel
42CTQ030-1	TO-262	1.85g	50pcs / tube

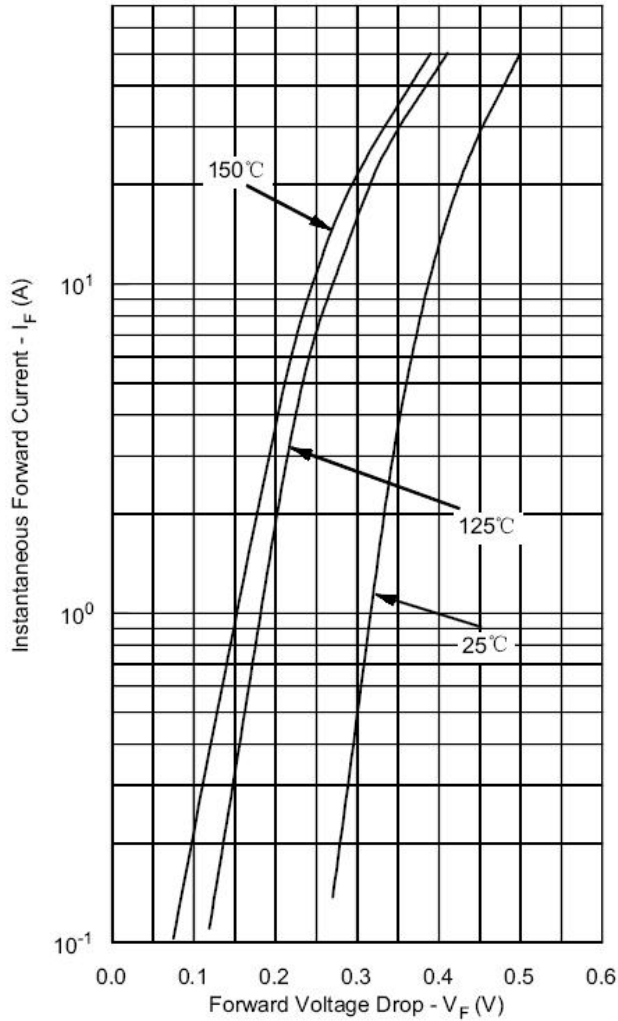
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Tube Specification(TO-220AB/TO-262)

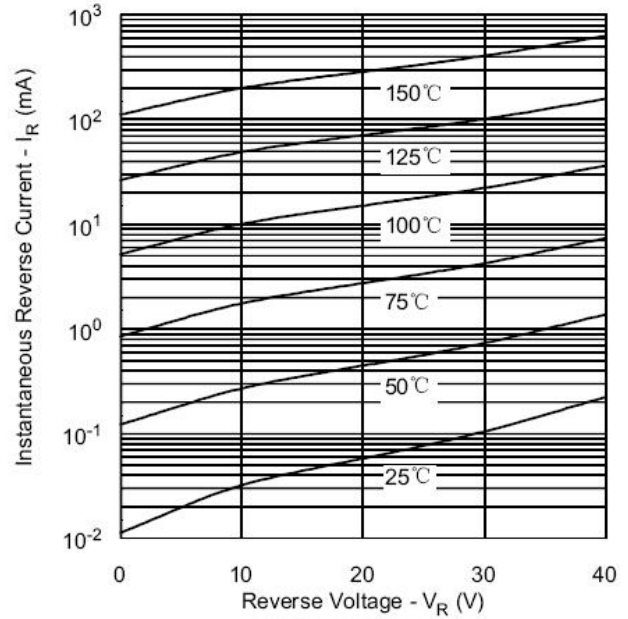


Ratings and Characteristics Curves

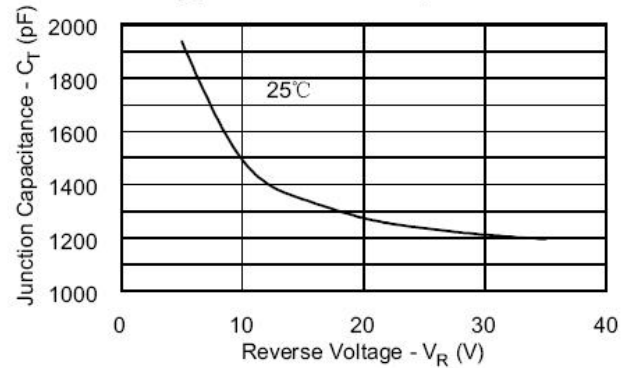
Typical Forward Characteristics



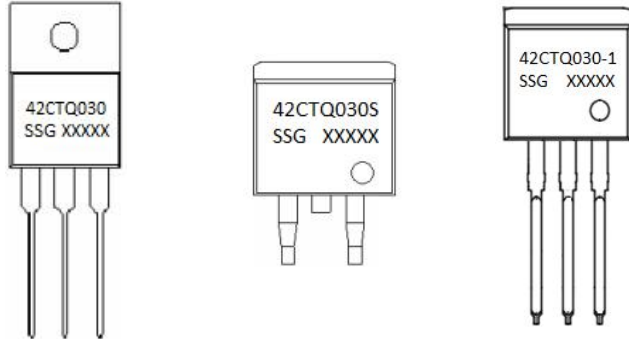
Typical Reverse Characteristics



Typical Junction Capacitance



Marking Diagram

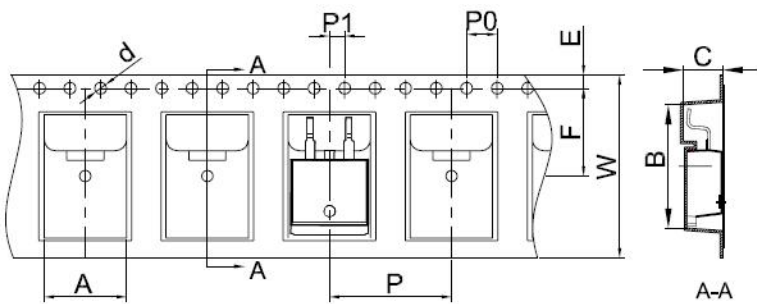


Where XXXXX is YYWWL

- 42 = Forward Current (40A)
- C = Configuration
- TQ = Device Type
- 30 = Reverse Voltage (30V)
- S/-1 = Package type
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

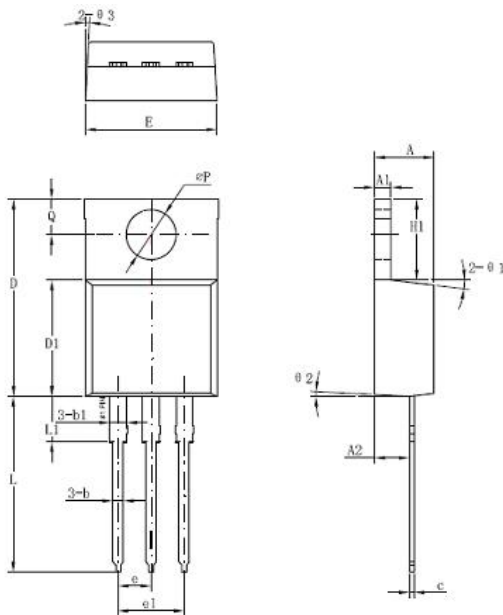
Cautions: Molding resin
 Epoxy resin UL:94V-0

Carrier Tape Specification D²PAK



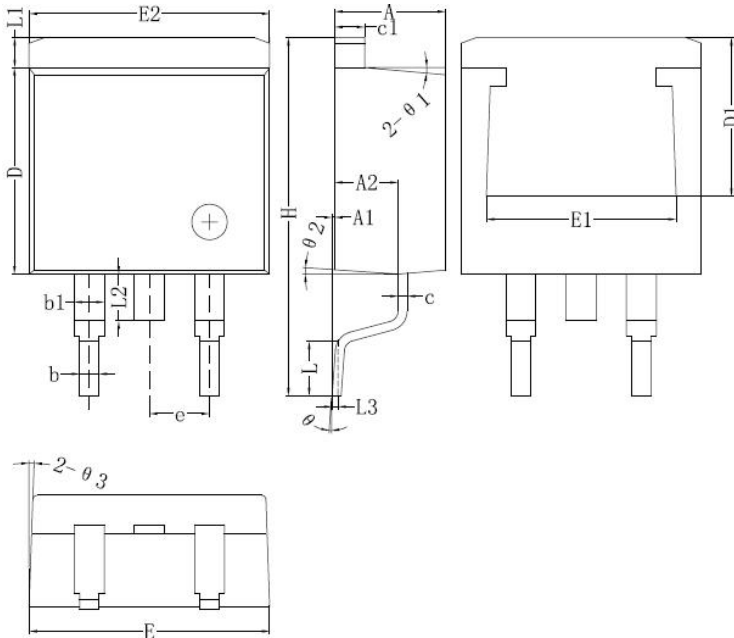
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

Mechanical Dimensions TO-220AB



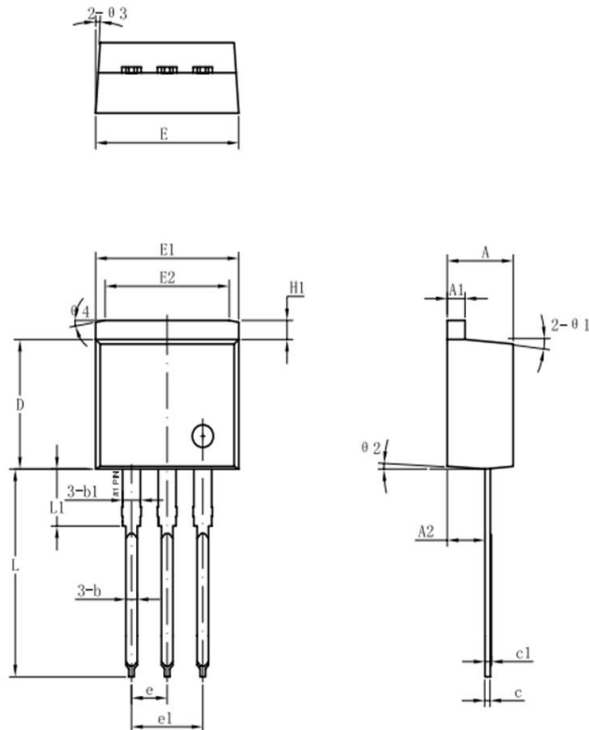
Symbol	Millimeters		
	Min.	Typical	Max.
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Q1		7°	
Q2		3°	
Q3		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°	

Mechanical Dimensions TO-262



Symbol	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°	



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