


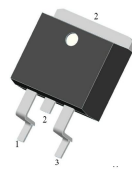

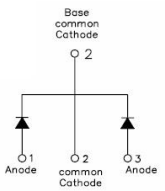
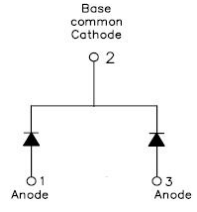
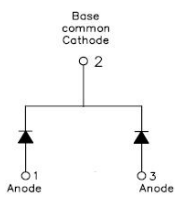
## 30CTQ.../30CTQ...S /30CTQ...-1 SCHOTTKY RECTIFIER

### Features

- 150°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
- Terminals finish: Tin Lead-free plated
- 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

30CTQ...	30CTQ...S	30CTQ...-1
		
		
TO-220AB	D <sup>2</sup> PAK	TO-262

### Maximum Ratings@T<sub>c</sub>=25°C unless otherwise specified

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	30(30CTQ030)	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		35(30CTQ035)	
DC Blocking Voltage	V <sub>R</sub>		40(30CTQ040) 45(30CTQ045)	
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =105°C, rectangular wave form	15(Per Leg) 30(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	318	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25 °C	0.51	0.62	V
	V <sub>F2</sub>	@ 15A, Pulse, T <sub>J</sub> = 125 °C	0.45	0.56	V
Reverse Current (Per Leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.05	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	27	40	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	702	900	pF

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

### Thermal-Mechanical Specifications:

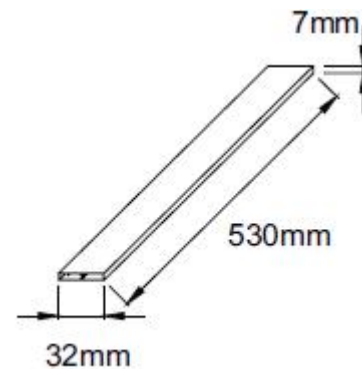
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +150	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	3.25	°C/W
Typical Thermal Resistance, Case to Heat Sink	R <sub>θJL</sub>	DC operation	0.50	°C/W
Case Style	TO-220AB D <sup>2</sup> PAK TO-262			

### Tube Specification

Device	Package	Weight	Shipping
30CTQ...	TO-220AB	1.8g	50pcs / tube
30CTQ...S	D <sup>2</sup> PAK	1.85g	800pcs / reel
30CTQ...-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**

Figure 1 Typical Forward Characteristics

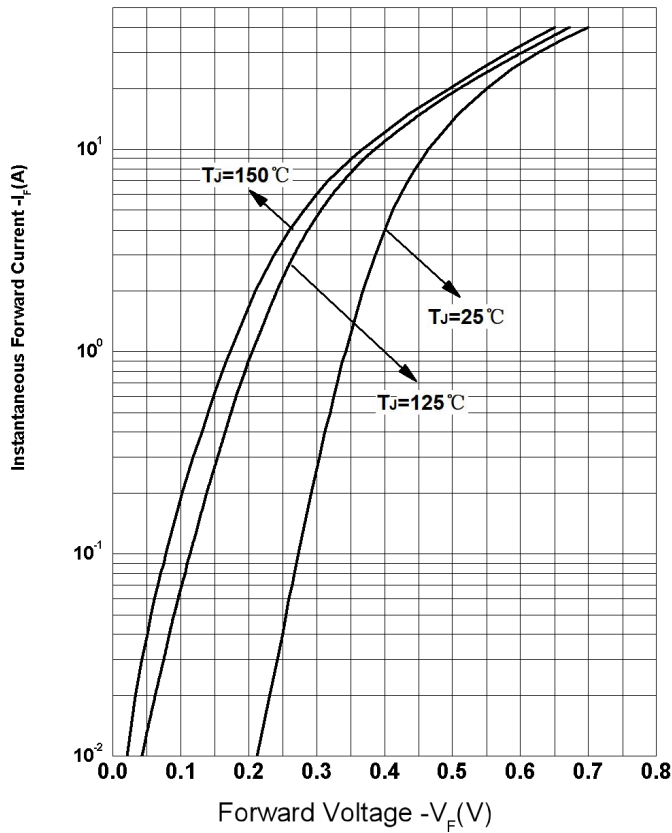


Figure 2 Typical Reverse Characteristics

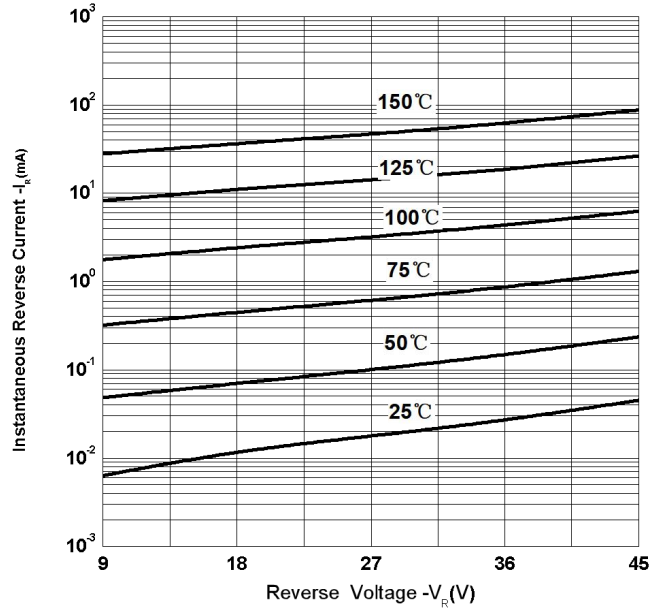
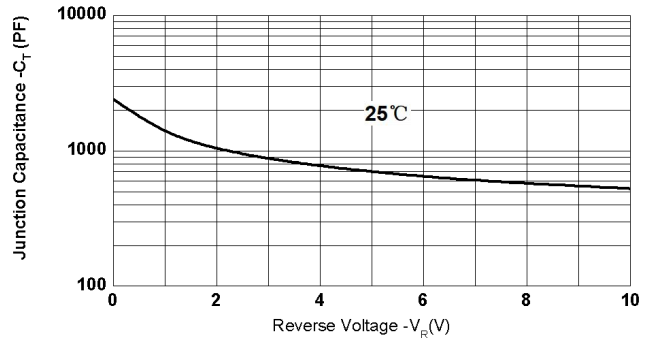
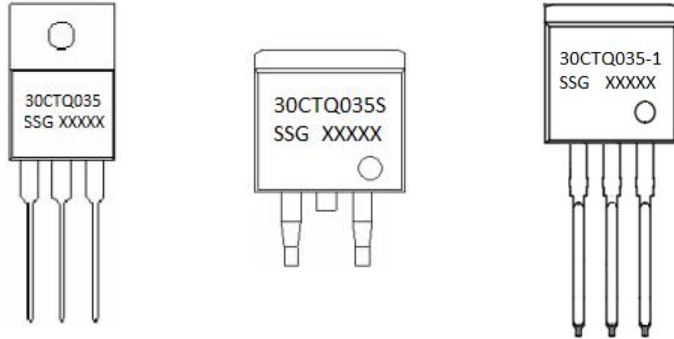


Figure 3 Typical Junction Capacitance



**Marking Diagram**

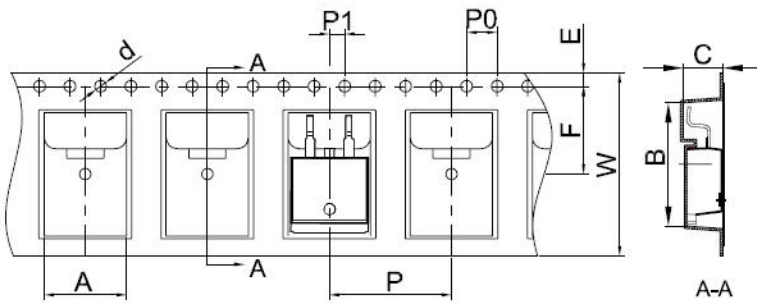


Where XXXXX is YYWWL

- 30 = Forward Current (30A)
- C = Configuration
- TQ = Device Type
- 30/35/40/45 = Reverse Voltage (30V/35V/40V/45V)
- S/-1 = Package type
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

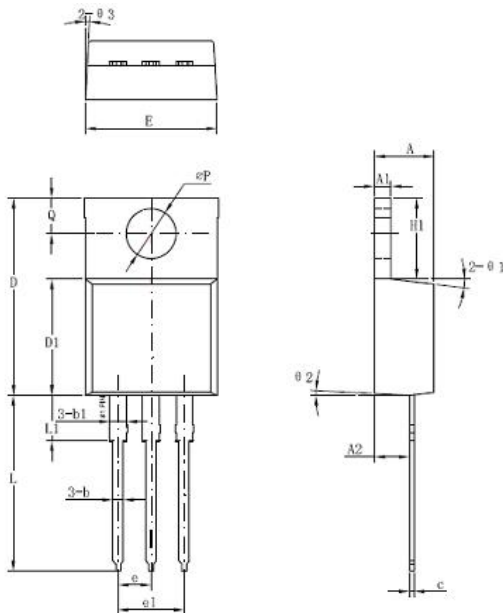
**Cautions:** Molding resin  
Epoxy resin UL:94V-0

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



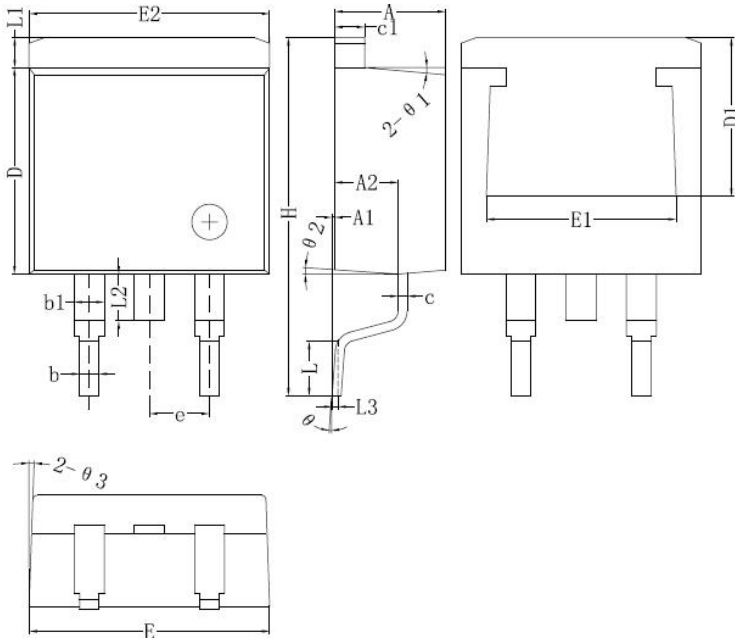
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

**Mechanical Dimensions TO-220AB**



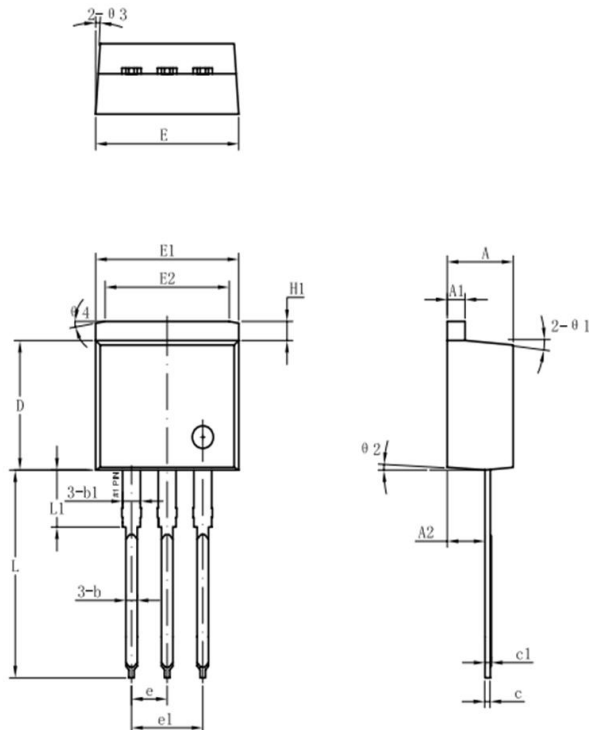
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	3.56	-	4.83
A1	0.51	-	1.4
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	9.65	-	10.67
e	-	2.54	-
e1	-	5.08	-
H1	5.84	-	6.86
L	12.7	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-
Q	2.54	-	3.43

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



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	
Ø	0	8°

### Mechanical Dimensions TO-262



Symbol	Millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
B	1.22	1.37	1.47
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	8.55	8.70	8.85
E	10.01	10.16	10.31
E1	9.88	10.08	10.28
e		2.54	
e1		5.08	
H1	1.17	1.27	1.37
L	13.00	13.86	14.08
L1		3.8	
Ø1		5°	
Ø2		4°	
Ø3		4°	
Ø4		10°	

**Technical Data**  
**Data Sheet N0281, Rev. B**



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