

## 12TQ150/12TQ150S SCHOTTKY RECTIFIER

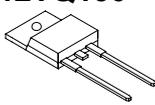
### Applications:

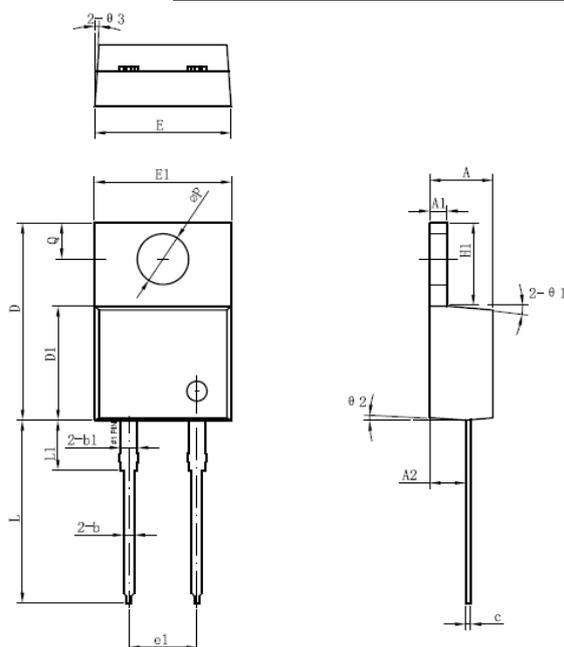
- Switching power supply
- Redundant power subsystems
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 175 °C T<sub>J</sub> operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- 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

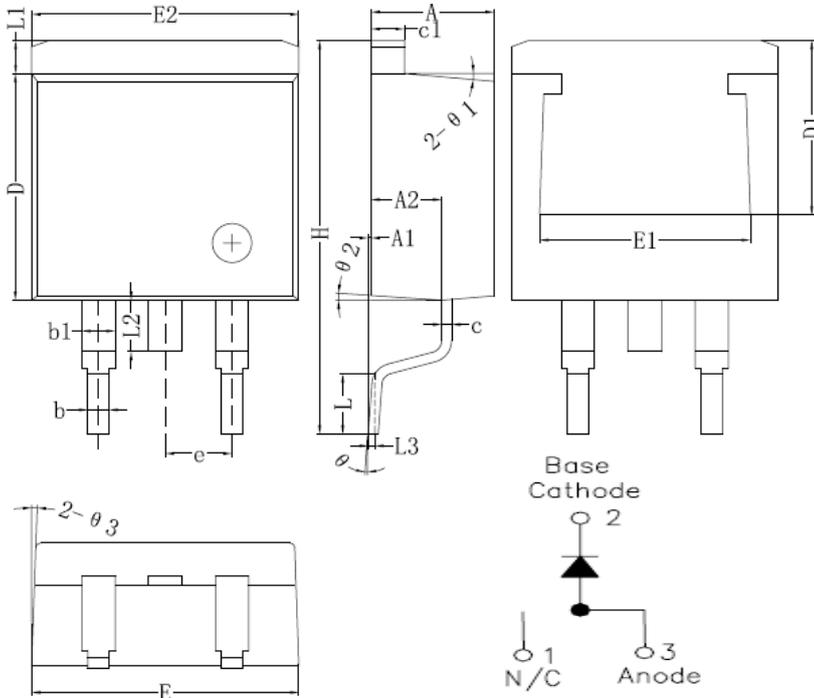
### Mechanical Dimensions: In mm / Inches

Case styles	
<p><b>12TQ150</b></p>  <p><b>TO-220AC</b></p>	<p><b>12TQ150S</b></p>  <p><b>D²PAK</b></p>



Symbol	Dimensions in 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	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		5°	
Θ2		4°	
Θ3		4°	

### TO-220AC

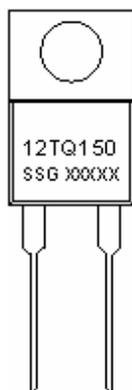


Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

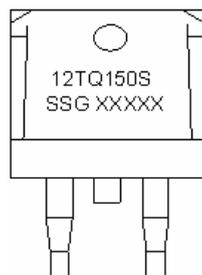
**D<sup>2</sup>PAK**

Technical Data  
Data Sheet N0609, Rev. -  
Marking Diagram:

Green Products



12TQ150



12TQ150S

Where XXXXX is YYWWL

12TQ150 =Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

Ordering Information:

Device	Package	Shipping
12TQ150	TO-220AC (Pb-Free)	50pcs / tube
12TQ150S	D <sup>2</sup> 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	$V_{RWM}$	-	150	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 116^{\circ}C$ , rectangular wave form	15	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half sine pulse	276	A



**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop*	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25 °C	0.86	V
	V <sub>F2</sub>	@ 15A, Pulse, T <sub>J</sub> = 125 °C	0.70	V
Max. Reverse Current *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> Pulse T <sub>J</sub> = 25 °C	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , Pulse T <sub>J</sub> = 125 °C	7	mA
Max. Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	500	pF
Typical Series Inductance (per leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/μs

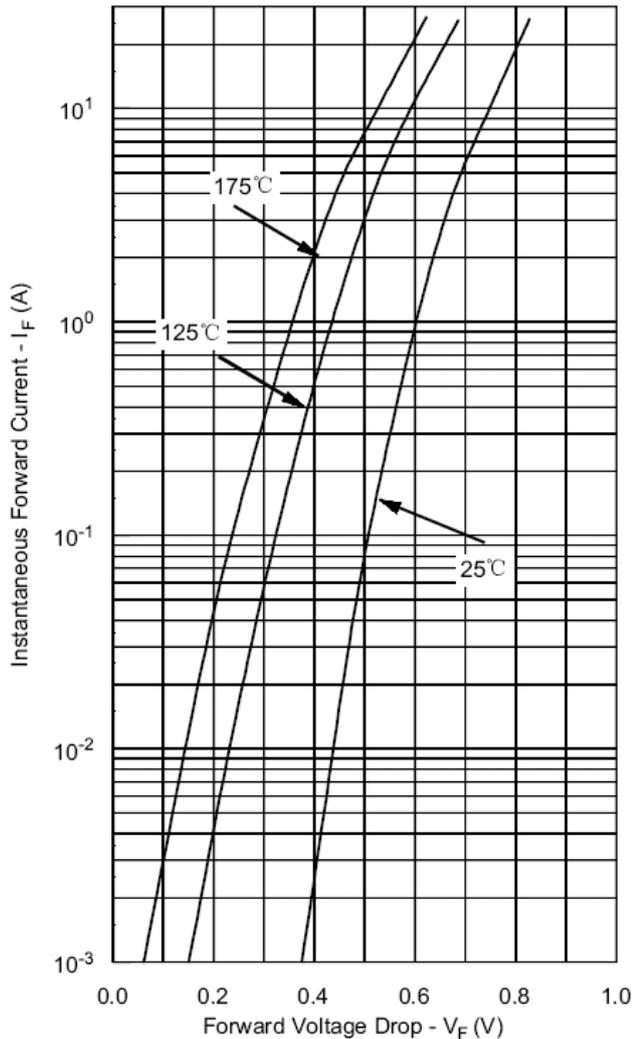
\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

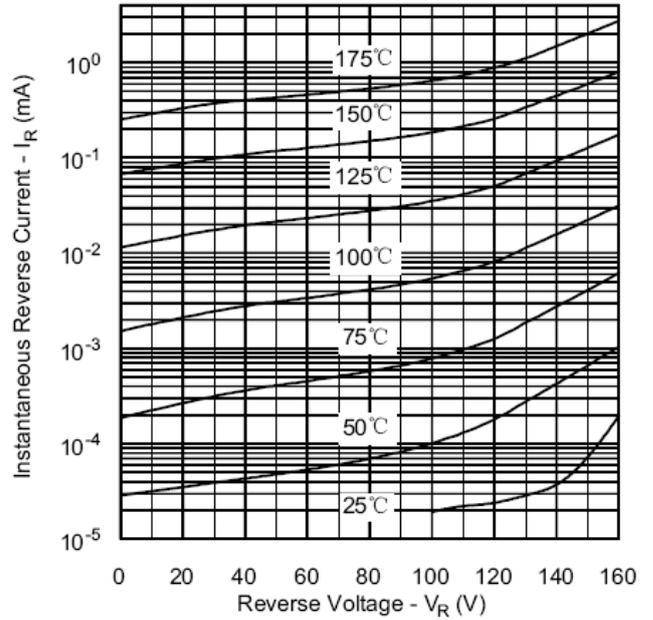
Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Max. Storage Temperature	T <sub>stg</sub>	-	-55 to +175	°C
Maximum Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	2.0	°C/W
Typical Thermal Resistance Case to Heat Sink	R <sub>θCS</sub>	Mounting surface, smooth and greased	0.50	°C/W
Approximate Weight	wt	-	2	g
Case Style	TO-220AC D <sup>2</sup> PAK(Suffix "s" for D <sup>2</sup> PAK;"MBRB × × × ×" for D <sup>2</sup> PAK)			



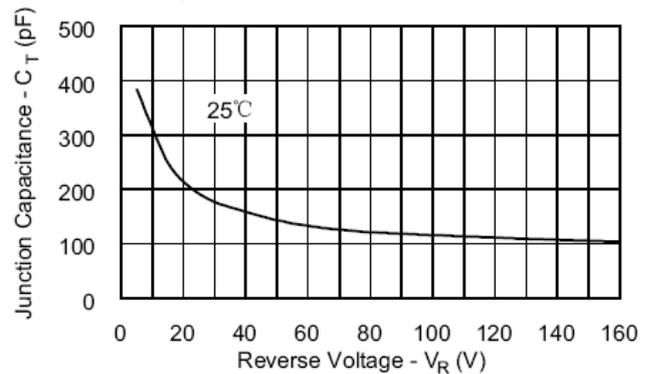
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**





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