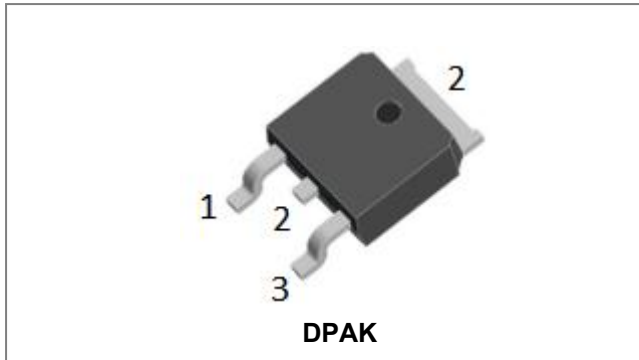


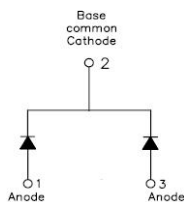
# 12CWQ03FN SCHOTTKY RECTIFIER



## Features

- Small foot print, surface mountable
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Green products in compliance with the ROHS directive
- “-A” is an AEC-Q101 qualified device
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

## Circuit Diagram



## Applications

- Disk drives
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Battery charging

## Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	30	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 135^\circ\text{C}$ , rectangular wave form	6(peg leg) 12(peg device)	A
Peak One Cycle Non-Repetitive Surge Current(peg leg)	$I_{FSM}$	8.3 ms, half Sine pulse	156	A

## Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	$V_{F1}$	@ 6A, Pulse, $T_J = 25^\circ\text{C}$	0.44	0.47	V
		@ 12A, Pulse, $T_J = 25^\circ\text{C}$	0.50	0.55	V
Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.06	3.0	mA
		@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	40	58	mA
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	480	590	pF

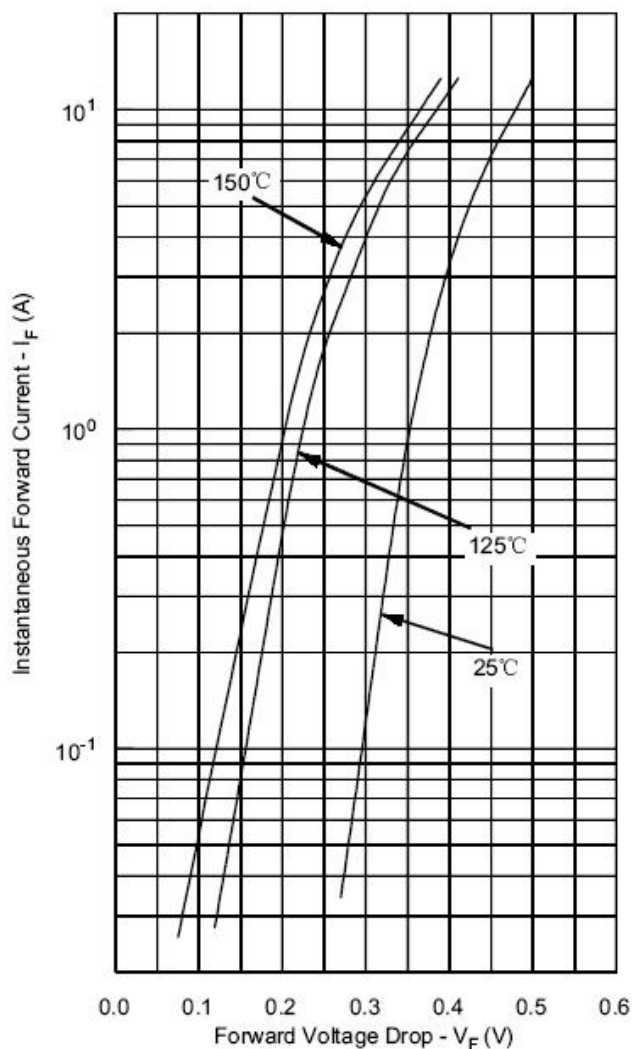
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

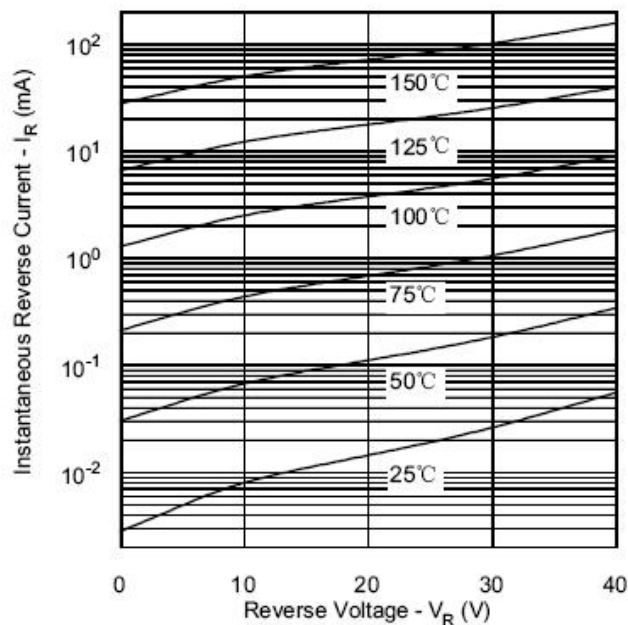
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	-	4.7(peg leg)	$^{\circ}\text{C/W}$
			2.35(peg device)	
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

**Ratings and Characteristics Curves**

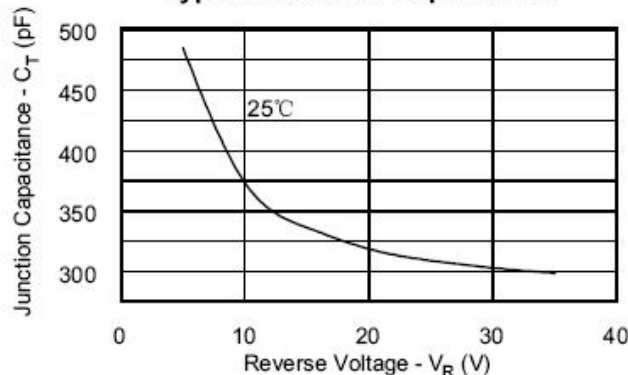
Typical Forward Characteristics

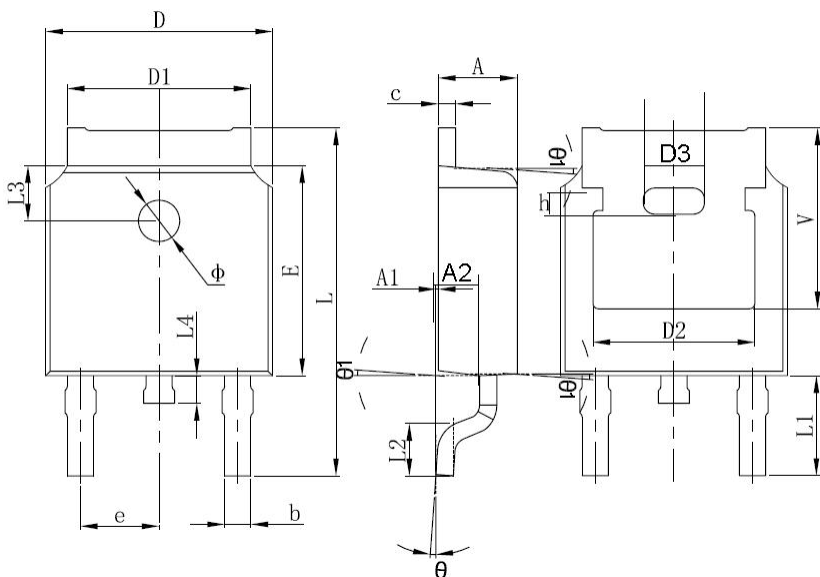


Typical Reverse Characteristics



Typical Junction Capacitance



**Mechanical Dimensions DPAK**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
A1	0.00	0.127	0.000	0.005
b	0.66	0.86	0.026	0.034
c	0.46	0.60	0.018	0.024
D	6.50	6.70	0.256	0.264
D1	5.13	5.46	0.202	0.215
D2	4.83 REF.		0.190 REF.	
E	6.00	6.20	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.70	10.40	0.381	0.409
L1	2.90 REF.		0.144 REF.	
L2	1.40	1.70	0.055	0.067
L3	1.60 REF.		0.063 REF.	
L4	0.60	1.00	0.024	0.039
Φ	1.10	1.30	0.043	0.051
Θ	0°	8°	0°	8°
h	0.00	0.30	0.000	0.012
V	5.35 REF.		0.211 REF.	

**Ordering Information**

Device	Package	Shipping
12CWQ03FN	DPAK (Pb-Free)	2500pcs / reel
12CWQ03FNTR	DPAK (Pb-Free)	2500pcs / reel

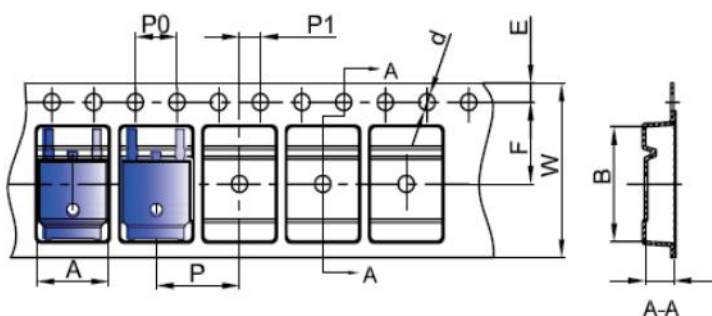
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

- 12 = Forward Current (12A)
- CW = Configuration
- Q = Device Type
- 03 = Reverse Voltage (30V)
- FN = Package type
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Carrier Tape Specification DPAK**


SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

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