ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number:	CPC3909ZTR
Manufacturer:	Littelfuse Inc.
Package:	Please confirm with sales
Availability:	Please confirm with sales

Product Page:

https://antrexco.com/product/details/littelfuse-inc/cpc3909ztr.html

Request a Quote:

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Contact Information

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Website: https://antrexco.com

Quality & Trust

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Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

IXYS
INTEGRATED CIRCUITS DIVISION

CPC3909
400V N-Channel Depletion-Mode FET

PRELIMINARY

Parameter	Rating	Units
Drain-to-Source Voltage - $V_{(BR)DSX}$	400	V
Max On-Resistance - $R_{DS(on)}$	9	Ω
Max Power		
SOT-89 Package	1.1	W
SOT-223 Package	2.5	W

Features

- 400V Drain-to-Source Voltage
- Depletion Mode Device Offers Low $R_{DS(on)}$ at Cold Temperatures
- Low On-Resistance: 4.5Ω (Typical) @ 25°C
- Low $V_{GS(off)}$ Voltage
- High Input Impedance
- Low Input and Output Leakage
- Small Package Size SOT-89 and SOT-223
- PC Card (PCMCIA) Compatible
- PCB Space and Cost Savings

Applications

- LED Drive Circuits
- Telecommunications
- Normally On Switches
- Ignition Modules
- Converters
- Security
- Power Supplies
- Regulators

Description

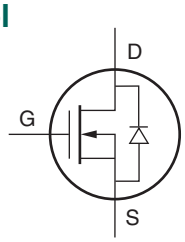
The CPC3909 is an N-channel, depletion mode Field Effect Transistor (FET) that is available in an SOT-223 package (CPC3909Z) and an SOT-89 package (CPC3909C). Both utilize IXYS Integrated Circuits Division's proprietary third-generation vertical DMOS process that realizes world class, high voltage MOSFET performance in an economical silicon gate process. The vertical DMOS process yields a highly reliable device, particularly for use in difficult application environments such as telecommunications, security, and power supplies.

CPC3909Z and the CPC3909C have a typical on-resistance of 4.5Ω and a drain-to-source voltage of 400V. As with all MOS devices, the FET structure prevents thermal runaway and thermally induced secondary breakdown.

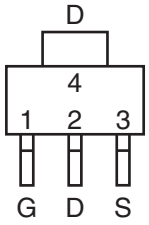
Ordering Information

Part Number	Description
CPC3909CTR	SOT-89: Tape and Reel (1000/Reel)
CPC3909ZTR	SOT-223: Tape and Reel (1000/Reel)

Circuit Symbol



Package Pinout:



Pin Number	Name
1	GATE
2	DRAIN
3	SOURCE
4	DRAIN

Absolute Maximum Ratings @ 25ºC

Parameter	Ratings	Units
Drain-to-Source Voltage ($V_{(BR)DSX}$)	400	V
Gate-to-Source Voltage (V_{GS})	15	V
Total Package Dissipation [1]		
SOT-89	1.1	W
SOT-223	2.5	
Operational Temperature	-40 to +110	ºC
Storage Temperature	-40 to +125	ºC

[1] Mounted on 1"x1" FR4 board.

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

Electrical Characteristics @25ºC (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Gate-to-Source Off Voltage	$V_{GS(off)}$	I_D=2µA, V_{DS}=10V, V_{DS}=100V	-0.9	-	-3.1	V
Drain-to-Source Leakage Current	$I_{DS(off)}$	V_{GS}= -5V, V_{DS}=210V	-	-	20	nA
		V_{GS}= -5V, V_{DS}=400V	-	-	1	µA
Drain Current	I_D	V_{GS}= 0V, V_{DS}=5V	300	-	-	mA
On-Resistance	$R_{DS(on)}$	V_{GS}= 0V, I_{DS}=300mA	-	4.5	9	Ω
Gate Leakage Current	I_{GSS}	V_{GS}=15V	-	-	100	nA
Gate Capacitance	C_{ISS}	V_{DS}= V_{GS}=0V	-	-	TBD	pF

Thermal Resistance

Package	Parameter	Symbol	Conditions	Min	Typ	Max	Units
SOT-89	Junction to Case	$R_{\theta JC}$	-	-	-	50	ºC/W
	Junction to Ambient	$R_{\theta JA}$				90	
SOT-223	Junction to Case	$R_{\theta JC}$	-	-	-	14	
	Junction to Ambient	$R_{\theta JA}$				55	

Manufacturing Information

Moisture Sensitivity

All plastic encapsulated semiconductor packages are susceptible to moisture ingression. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

Device	Moisture Sensitivity Level (MSL) Rating
CPC3909C / CPC3909Z	MSL 1

ESD Sensitivity

This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

Reflow Profile

This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

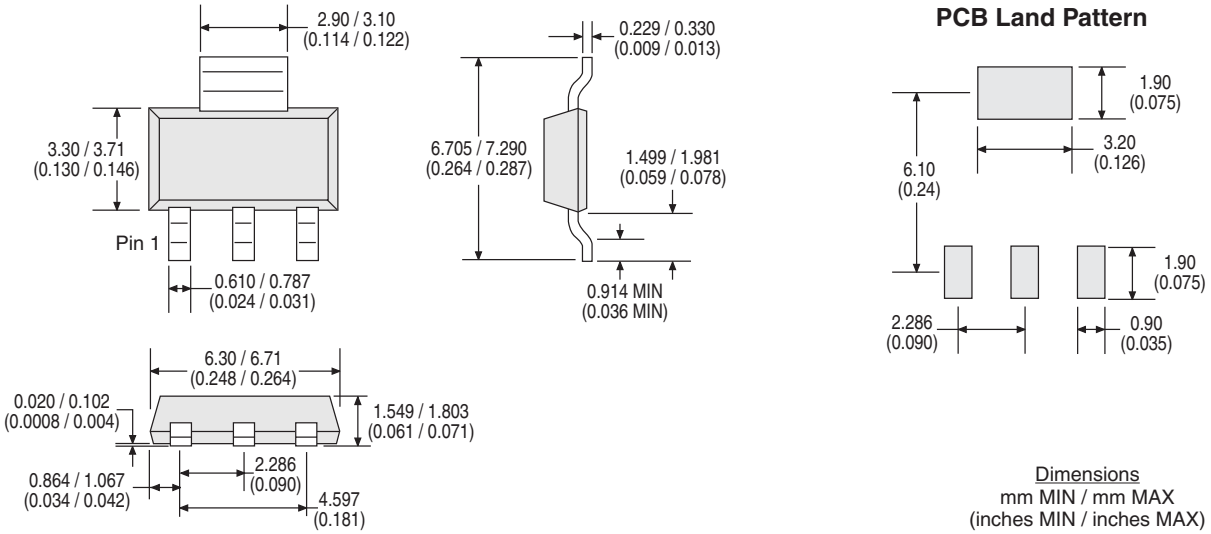
Device	Maximum Temperature x Time
CPC3909C / CPC3909Z	260°C for 30 seconds

Board Wash

IXYS Integrated Circuits Division recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable, and the use of a short drying bake may be necessary. Chlorine-based or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.

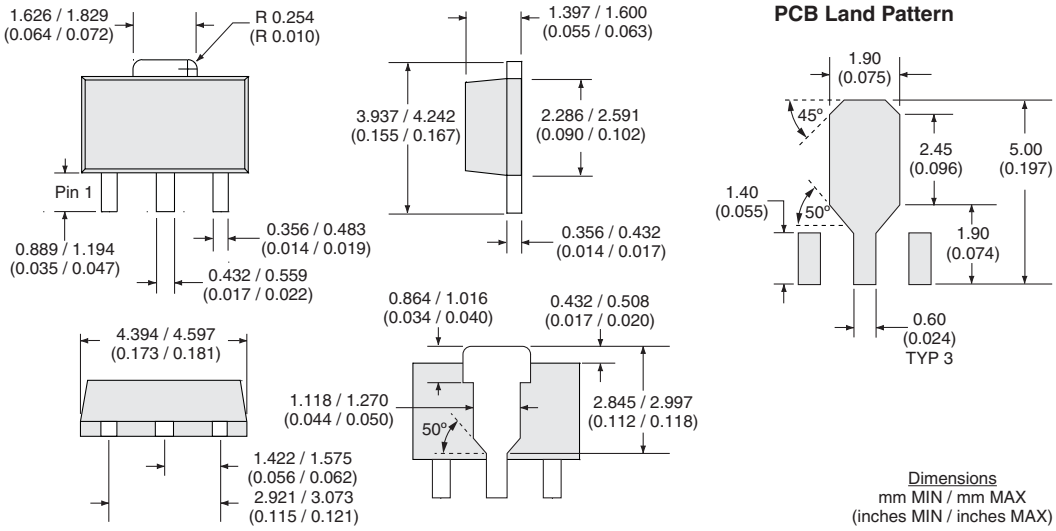
MECHANICAL DIMENSIONS

CPC3909Z



Dimensions
mm MIN / mm MAX
(inches MIN / inches MAX)

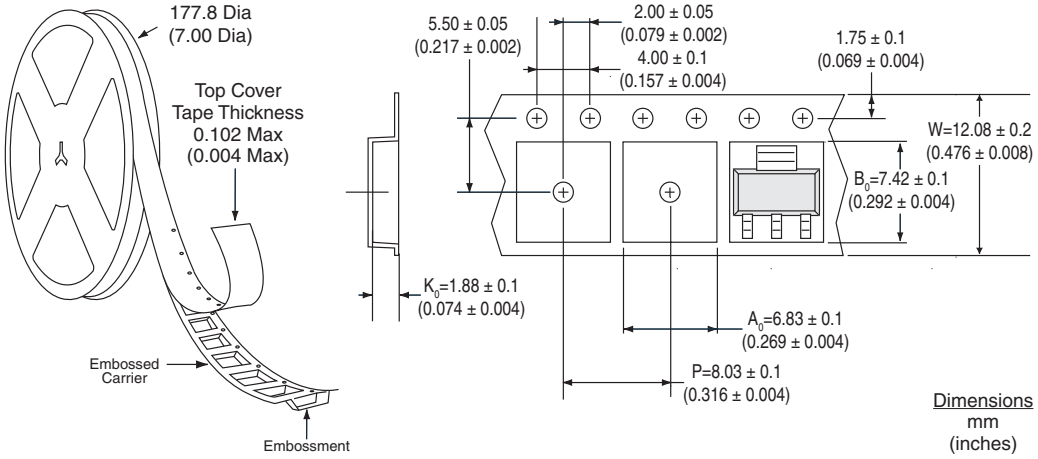
CPC3909C



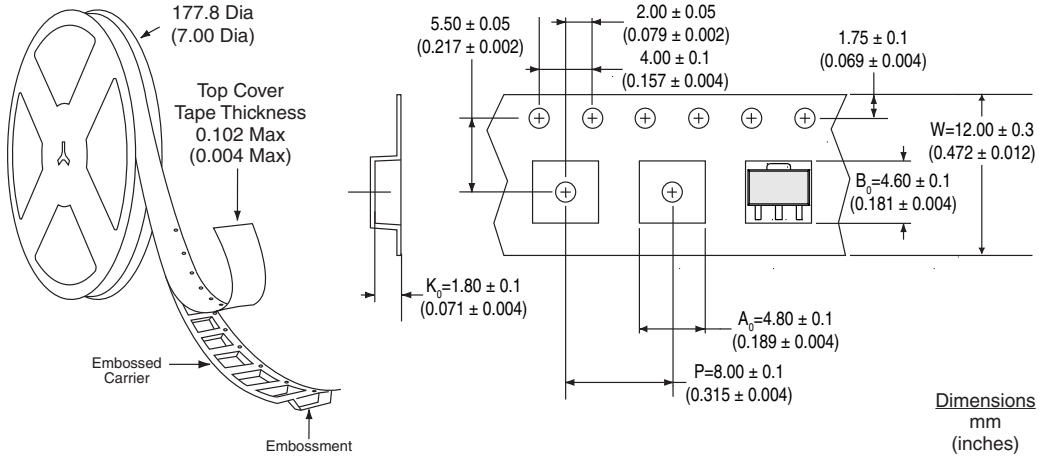
Dimensions
mm MIN / mm MAX
(inches MIN / inches MAX)

MECHANICAL DIMENSIONS

CPC3909ZTR Tape & Reel



CPC3909CTR Tape & Reel



For additional information please visit our website at: www.ixysic.com

Specification: DS-CPC3909-R00C

11/6/2014