

# $\mu R_{DS(on)}$ FET™ Series

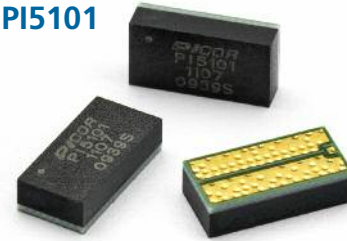
5 Volt, 360  $\mu\Omega$  N-Channel MOSFET, PI5101



## Features

- Ultra low 360  $\mu\Omega$   $R_{DS(on)}$
- Extremely low gate charge
- Very low gate resistance
- High density, low profile
- Very low package inductance
- Low thermal resistance
- Low thermal impedance  $R_{\theta J\_PCB} < 10^{\circ}C/W$
- Small foot print

PI5101



4.1 mm x 8 mm x 2 mm  
Thermally Enhanced LGA

## Product Description

The PI5101  $\mu R_{DS(on)}$  FET™ solution combines a high-performance 5 V, 360  $\mu\Omega$  lateral N-Channel MOSFET with a thermally enhanced high density 4.1 mm x 8 mm x 2 mm land-grid-array (LGA) package to enable world class performance in the footprint area of an industry standard SO-8 package. The PI5101 offers unprecedented figure-of-merits for DC & switching applications. The PI5101 will replace up to 6 conventional “SO-8 form factor” devices for the same on-state resistance, reducing board space by ~80%. The device offers unprecedented figure-of-merit for  $R_{DS(on)}$  x QG, gate resistance (RG) and package inductance (LDS) outperforming conventional Trench MOSFETs and enabling very low loss operation. The PI5101 LGA package is fully compatible with industry standard SMT assembly processes.

## Applications

- Power path management solutions
- Active ORing & load switches
- High current DC-DC converters

## Part Numbering

Part Number	Package	Continuous Current	Pulsed Current	Thermal Resistance	Low Package Inductance	Low Gate Charge	On-State Resistance	Shipment Packaging
PI5101-00-LGIZ	4.1 x 8 mm LGA	60 A	150 A	$R_{\theta J-PCB}$ : 6°C/W $R_{\theta J-A}$ : 40°C/W	0.1 nH	60 nC	360 $\mu\Omega$	Tape and Reel

## Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-to-Source Voltage	$V_{DS}$	5	V
Gate-to-Source Voltage	$V_{GS}$	+/- 5	V
Drain Current	Continuous	60	A
	Pulsed	150	A
Single Pulse Avalanche Current	$T_{av} < 100 \mu s$	100	A
Maximum Power Dissipation	$T_A = 25^{\circ}C$	3.1	W
	$T_A = 70^{\circ}C$	2	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	°C
Thermal Resistance(1)	Junction-to-Ambient	40	°C/W
	Junction-to-PCB	6	