

P-Channel Enhancement Mode Field Effect Transistor

General Description

This MOSFET utilizes a unique structure that combines the benefits of low on-resistance with fast switching speed, making it ideal for high-efficiency power management applications.

Features

- $R_{DS(ON)} < 250\text{m}\Omega$ @ $V_{GS} = -10\text{V}$
- $R_{DS(ON)} < 300\text{m}\Omega$ @ $V_{GS} = -4.5\text{V}$
- Fast switching speed
- Surface mount package

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-1.6	A
I_{DM}	Pulsed Drain Current	-6	A
$P_D @ T_A = 25^\circ\text{C}$	Total Power Dissipation	1	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ($t \leq 5\text{s}$)	---	120	$^\circ\text{C/W}$

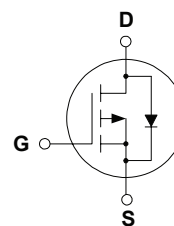
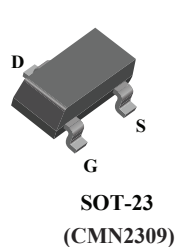
Product Summary

BVDSS	$R_{DS(ON)}$	ID
-60V	250m Ω	-1.6A

Applications

- DC-DC converters
- Relay and solenoid driving
- Power management functions
- Load switch

SOT-23 Pin Configuration



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Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-1.8A$	---	---	250	$m\Omega$
		$V_{GS}=-4.5V$, $I_D=-1.4A$	---	---	300	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60V$, $V_{GS}=0V$	---	---	-10	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-30V$, $R_G=3.3\Omega$ $I_D=-1A$	---	18	---	ns
$T_{d(off)}$	Turn-Off Delay Time		---	7.5	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1MHz$	---	350	---	pF
C_{oss}	Output Capacitance		---	38	---	
C_{rss}	Reverse Transfer Capacitance		---	20	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-1.2A$	---	---	-1.2	V