

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	IRLL024Z
▶ Overseas	Part Number	IRLL024Z
▶ Equivalent	Part Number	IRLL024Z

EV is the abbreviation of name EVVO

60V N-Channel Enhancement Mode MOSFET

General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

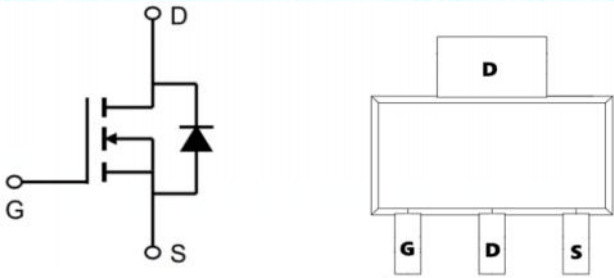
Applications

- DC-DC Converters
- Power management functions

Product Summary

- V_{DS} 60V
- I_D 3.0A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 80 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 100 mohm

SOT223-3L Pin Configuration



Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	60	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	3.0	A
Pulsed Drain Current ^A	I_{DM}	12	A
Total Power Dissipation @ $T_C=25^{\circ}C$	P_D	1.2	W
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	105	$^{\circ}C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}C$

60V N-Channel Enhancement Mode MOSFET
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

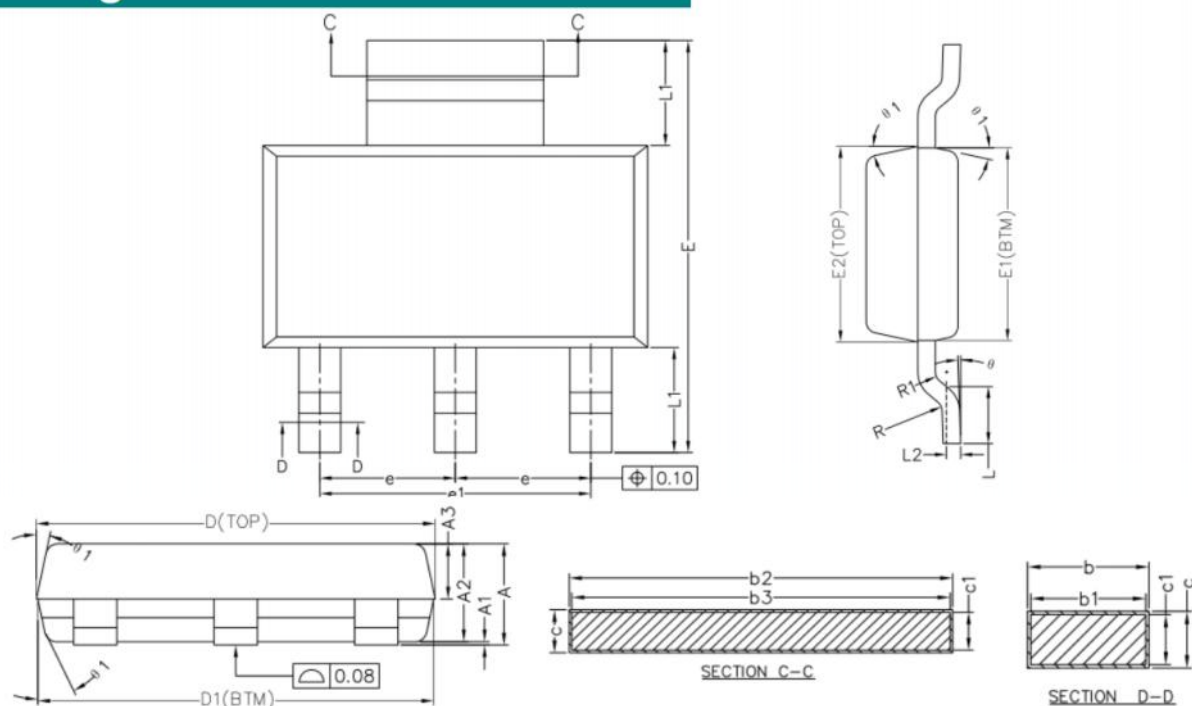
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V,V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS1}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
	I _{GSS2}	V _{GS} = ±12V, V _{DS} =0V			±50	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.1	1.7	2.3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =2A			80	mΩ
		V _{GS} = 4.5V, I _D =1.5A			100	
Diode Forward Voltage	V _{SD}	I _S =2.0A,V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				2.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V,V _{GS} =0V,f=1MHZ		330		pF
Output Capacitance	C _{oss}			90		
Reverse Transfer Capacitance	C _{rss}			17		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V,V _{DS} =30V,I _D =2.0A		5.1		nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.7		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V,V _{DD} =30V, I _D =1.5A,R _L =1Ω R _{GEN} =3Ω		13		ns
Turn-on Rise Time	t _r			51		
Turn-off Delay Time	t _{D(off)}			19		
Turn-off fall Time	t _f			12		

 A. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

60V N-Channel Enhancement Mode MOSFET

Package Mechanical Data-SOT-223



Symbol	Min	Nom	Max
A	--	--	1.80
A1	0.02	--	0.10
A2	1.50	1.60	1.70
A3	0.80	0.90	1.00
b	0.67	--	0.80
b1	0.66	0.71	0.76
b2	2.96	--	3.09
b3	2.95	3.00	3.05
C	0.30	--	0.35
C1	0.29	0.30	0.31
D	6.48	6.53	6.58
D1	6.55	6.60	6.65
E	6.80	--	7.20
E1	3.40	3.50	3.60
E2	3.33	3.43	3.53
e	2.30BSC		
e1	4.60BSC		
L	0.80	1.00	1.20
L1	1.75REF		
L2	0.25BSC		
R	0.10	--	--
R1	0.10	--	--
θ	0°	--	8°
θ1	10°	12°	14°

Disclaimer

EVVOSEMI ("EVVO") reserves the right to make corrections, enhancements, improvements, and other changes to its products and services at any time, and to discontinue any product or service without notice.

EVVO warrants the performance of its hardware products to the specifications applicable at the time of sale in accordance with its standard warranty. Testing and other quality control techniques are used as deemed necessary by EVVO to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Customers should obtain and confirm the latest product information and specifications before final design, purchase, or use. EVVO makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does EVVO assume any liability for application assistance or customer product design. EVVO does not warrant or accept any liability for products that are purchased or used for any unintended or unauthorized application.

EVVO products are not authorized for use as critical components in life support devices or systems without the express written approval of EVVOSEMI.

The EVVO logo and EVVOSEMI are trademarks of EVVOSEMI or its subsidiaries in relevant jurisdictions. EVVO reserves the right to make changes without further notice to any products herein.