

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	IRF7807
▶ Overseas	Part Number	IRF7807
▶ Equivalent	Part Number	IRF7807

EV is the abbreviation of name EVVO

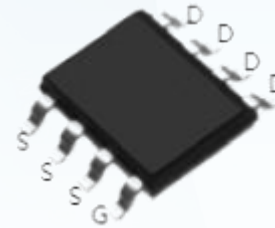
V _{DSS} (V)	R _{DS} (ON)	I _D (A)
30	14mΩ(Typ)@V _{GS} =10V	8
	28mΩ(Typ)@V _{GS} =4.5V	

FEATURE:

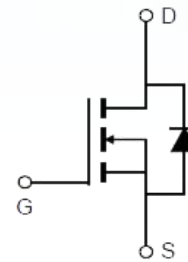
- The IRF7807 is the high cell density trench N-ch MOSFETS, which provides excellent R_{DS(on)} and efficiency for most of the small power switching and load switch applications.

- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

Pin Description



SOP-8



Absolute Maximum Ratings

Symbol	Parameter		Rating	Units
V _{DSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current(V _{GS} = 4.5V)	T _c =25°C	8	A
		T _c =70°C	5.8	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _{DM}	Pulsed Drain Current		28	A
P _D	Maximum Power Dissipation	T _c =25°C	2.5	W
		T _c =70°C	---	
E _{AS}	Avalanche Energy, Single Pulsed		20	mJ
R _{θJC}	Thermal Resistance-Junction to Case		25	°C/W
R _{θJA}	Thermal Resistance-Junction to Ambient		85	°C/W

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250uA	30	---	---	V
VGS(th)	Gate threshold voltage	VDS=VGS,ID=250uA	1.0	1.5	2.5	V
RDS(on)	Drain-Source On-state Resistance	VGS=10V , ID=5.5A	---	14	25	mΩ
		VGS=4.5V , ID=4.5A	---	28	40	mΩ
IGSS	Gate-source leakage current	VGS=±20V , VDS=0V	---	---	±100	nA
IDSS	Zero gate voltage drain current	VDS=30V,VGS=0V,TJ=25℃	---	---	1	μA
		TJ=55℃	---	---	---	
Dynamic Characteristic						
Ciss	Input Capacitance	VGS=0V, VDS=15V, Frequency=1.0MHz	---	490	---	pF
Coss	Output Capacitance		---	79	---	
Crss	Reverse Transfer Capacitance		---	61	---	
QG	Gate Total Charge	VDS=15V, VGS=10V, IDS=5.8A	---	5.2	---	nC
Qgs	Gate-Source charge		---	0.9	---	
Qgd	Gate-Drain charge		---	1.3	---	
td(on)	Turn-on delay time	VDD=15V , VGS=10V , RG=3Ω, ID=3A	---	4.5	---	ns
tr	Turn-on Rise Time		---	2.5	---	
td(off)	Turn-off Delay Time		---	14.5	---	
tf	Turn-off Fall Time		---	3.5	---	
RG	Gate Resistance	VGS=0V,VDS=0V,F=1MHz	---	---	---	Ω
Diode Characteristics						
Is	Maximum Continuous Drain to Source Diode Forward Current		---	---	8	
ISM	Maximum Pulsed Drain to Source Diode Forward Current		---	---	23.2	A
VSD	Diode Forward Voltage	VGS=0V , IS=5.8A	---	---	1.2	V
trr	Reverse Recovery Time	ISD=5.8A, dISD/dt=-100A/μs	---	---	---	ns
Qrr	Reverse Recovery Charge		---	---	---	nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

Figure 1: Output Characteristics

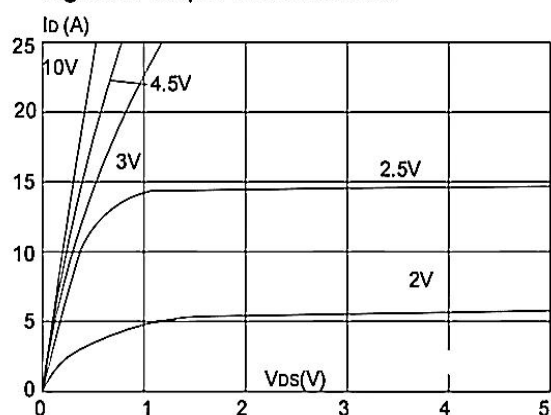


Figure 2: Typical Transfer Characteristics

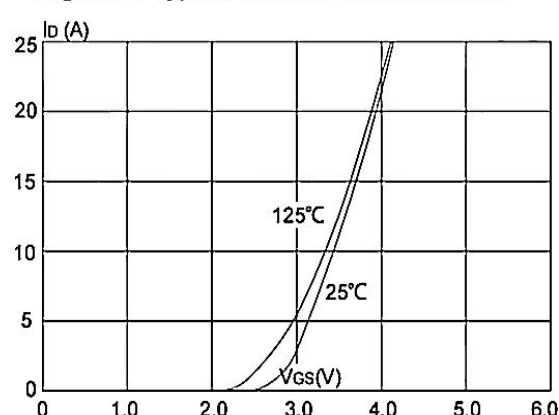


Figure 3: On-resistance vs. Drain Current

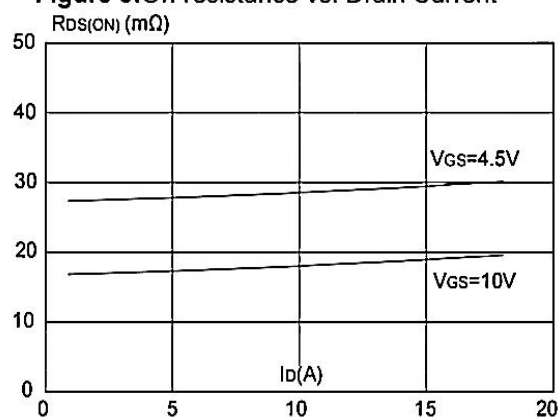


Figure 4: Body Diode Characteristics

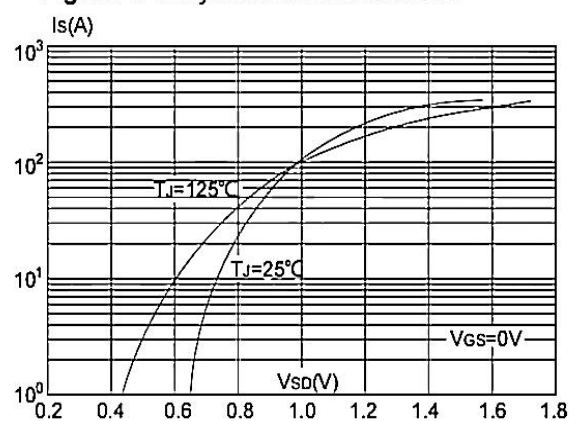


Figure 5: Gate Charge Characteristics

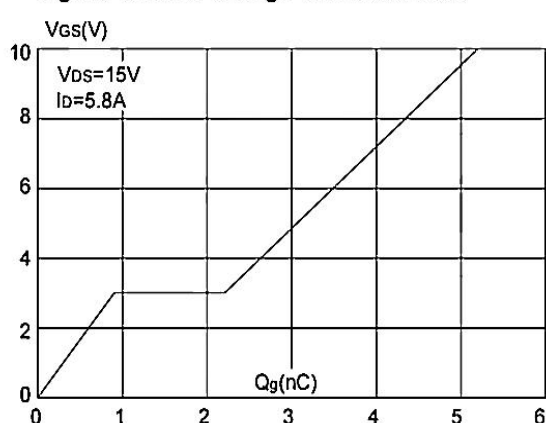
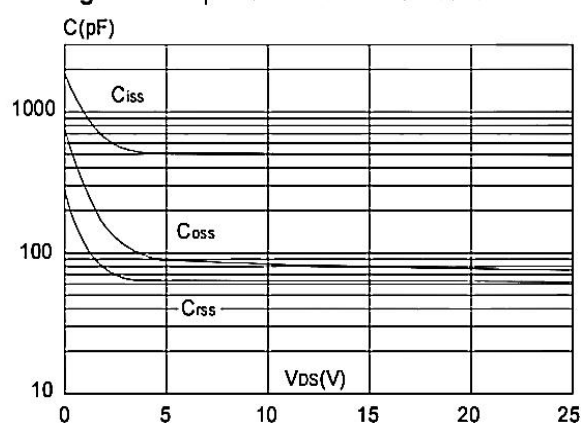


Figure 6: Capacitance Characteristics



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

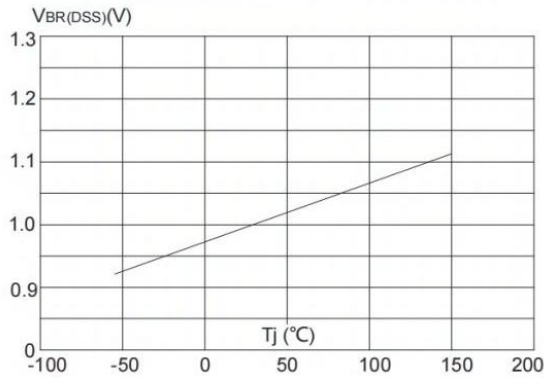


Figure 8: Normalized on Resistance vs. Junction Temperature

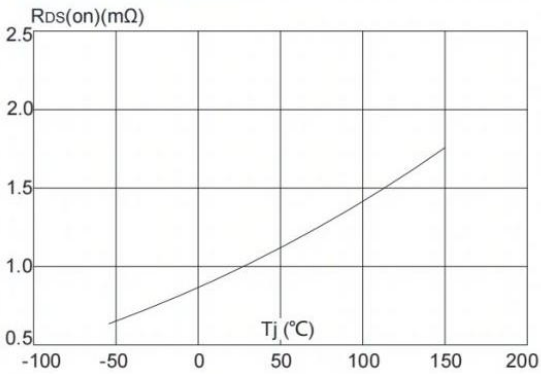


Figure 9: Maximum Safe Operating Area

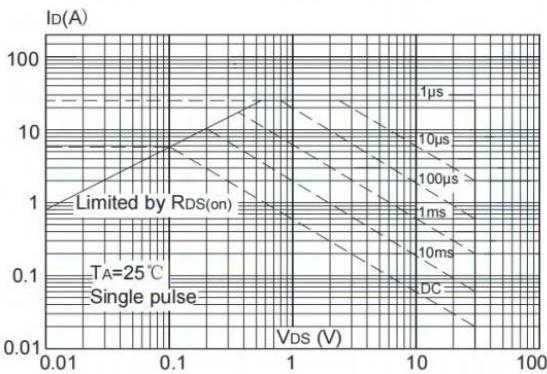


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

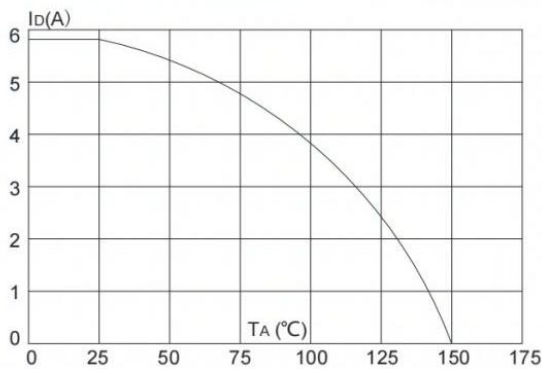
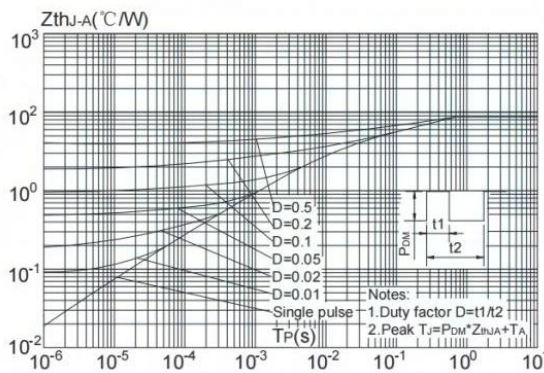
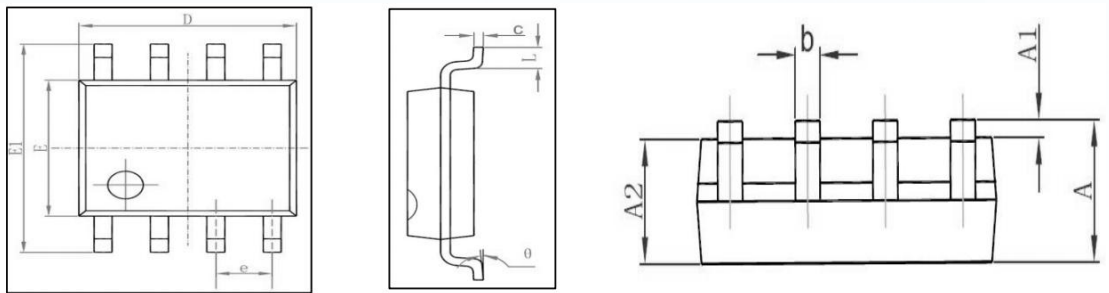


Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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.