MSD30P06 P-Channel 60-V (D-S) MOSFET

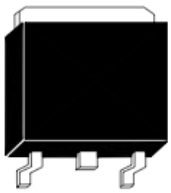
GENERAL DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low RDS(on) and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, and PCMCIA cards, cellular and cordless telephones.

FEATURES

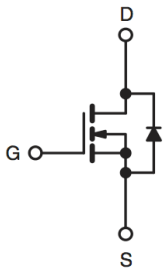
- Low RDS(on) provides higher efficiency and extends battery life
- Low thermal impedance copper lead frame DPAK saves board space
- Fast switching speed
- High performance trench technology

TO-252



G D S

1.Gate 2. Drain 3. Source



RoHS COMPLIANT

HALOGEN FREE Avaliable

Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-60	V
Gate-Source Voltage	VGS	±20	V
Continuous Drain Current @ TC=25°C	ID	28	A
Pulsed Drain Current	IDM	±50	A
Continuous Source Current (Diode Conduction)	IS	-30	A
Operating Junction and Storage Temperature	Tj, Tstg	-55~+175	°C
Power Dissipation@ TC=25°C	PW	50	W

NOTE:

1. Repetitive rating; pulse width limited by maximum junction temperature.

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Thermal characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Junction-to-Ambient	RθJA	50	°C/W
Maximum Junction-to-Case	RθJc	3	

Characteristics (Tc=25°C, unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics					
VGS	VGS = VDS, ID = 250 uA	-1.0	-	-	V
IGSS	VDS = 0 V, VGS = ± 20 V	-	-	±100	nA
IDSS	VDS = -48 V, VGS = 0 V	-	-	1.00	uA
	VDS = -48 V, VGS = 0 V, T J = 55oC	-	-	-10.0	uA
ID(on)	VDS = -5 V, VGS = 10 V	-20	-	-	A
RDS(on)	VGS = -10 V, ID = 28 A	-	-	54	mΩ
	VGS = -4.5 V, ID = -24 A	-	-	69	mΩ
gfs	VDS = -15 V, ID = -28 A	-	8.0	-	S
VSD	IS = 2.5 A, VGS = 0 V	-	-	-1.2	V
Dynamic Characteristics					
Qg	VDS = -30 V, VGS = -4.5 V, ID = -2 8A	-	18	-	nC
Qgs		-	5	-	nC
Qgd			2		
td(on)	VDD = -30 V, RL = 30ohm , ID = -1.0 A, VGEN = -10 V	-	8	-	nS
tr		-	10	-	nS
td(off)		-	35	-	nS
tf		-	12	-	nS

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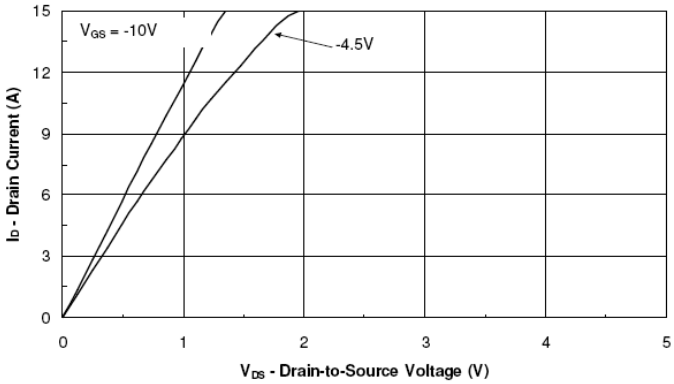
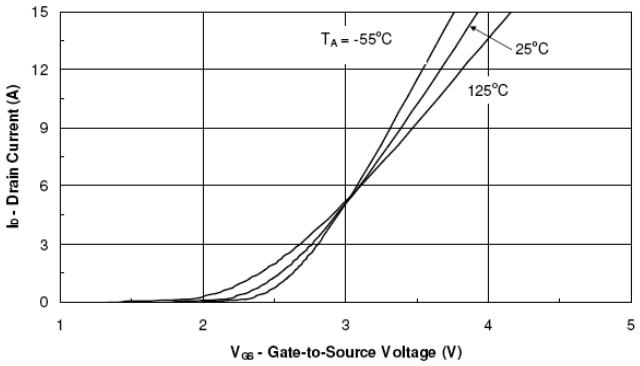
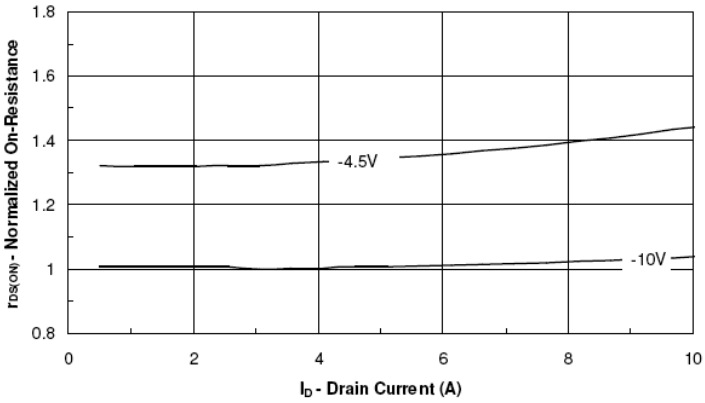
Typical Electrical Characteristics



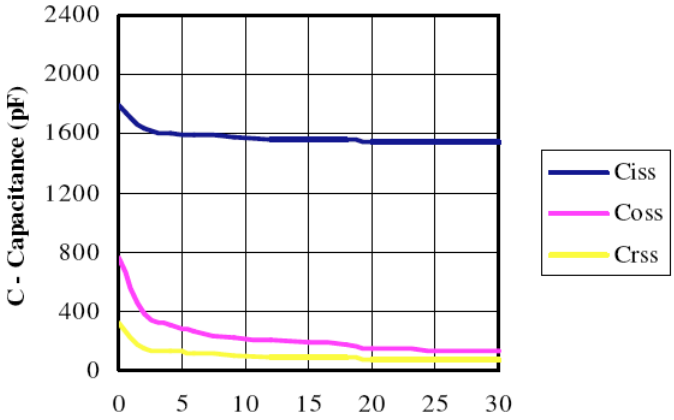
Output Characteristics



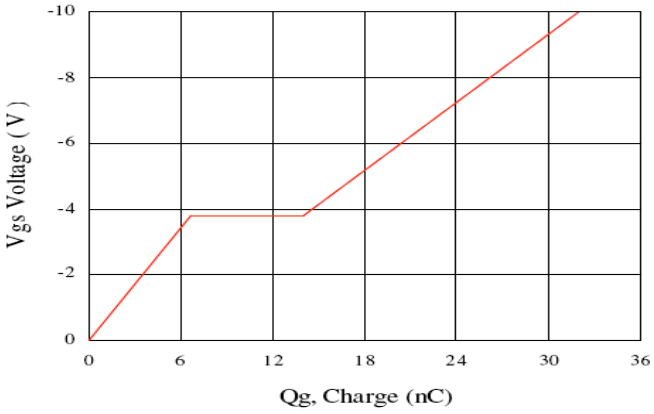
Transfer Characteristics



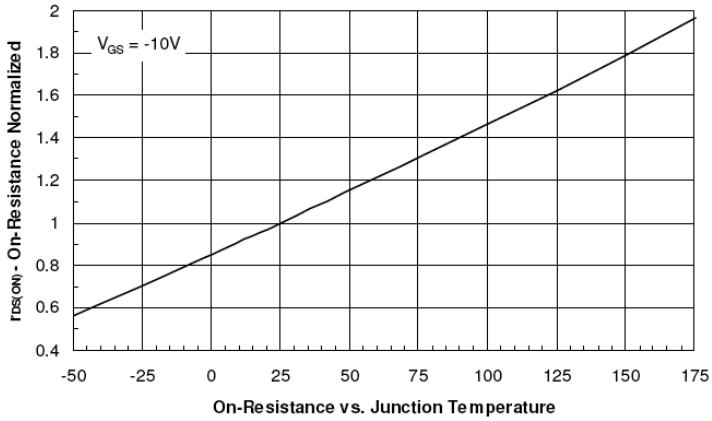
On-Resistance vs. Drain Current



Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

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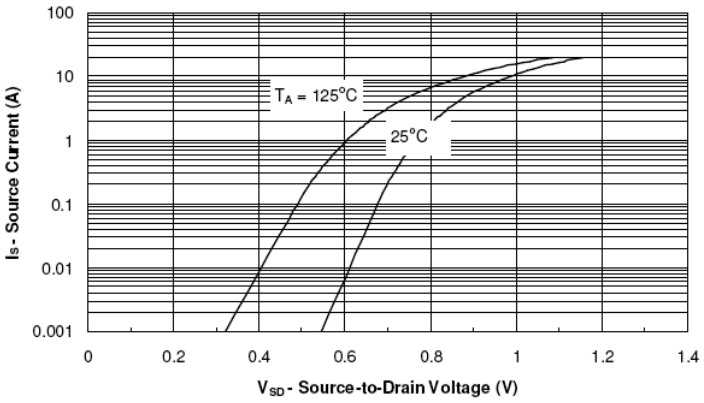
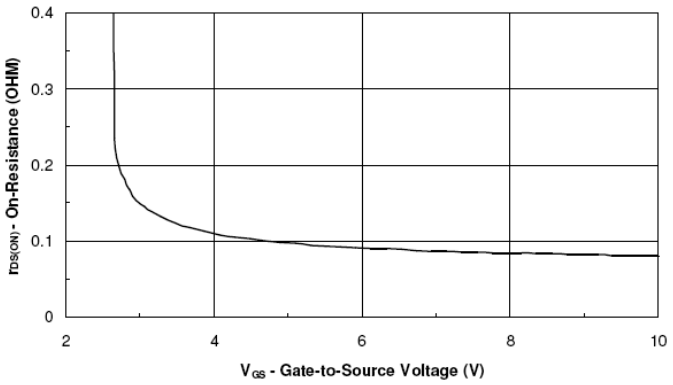
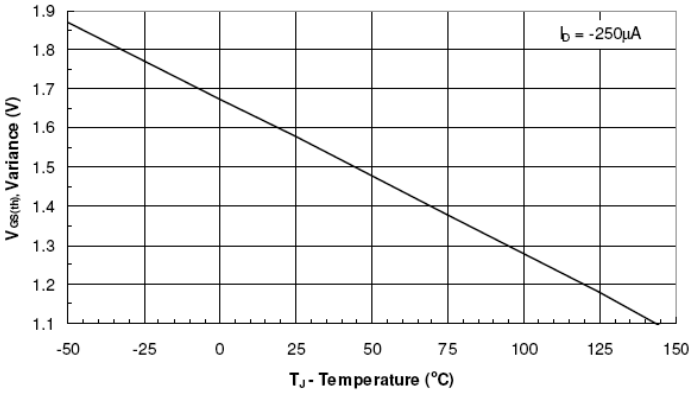
Typical Electrical Characteristics

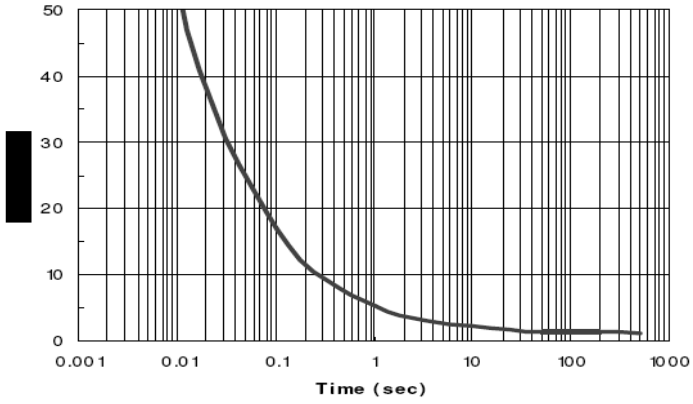


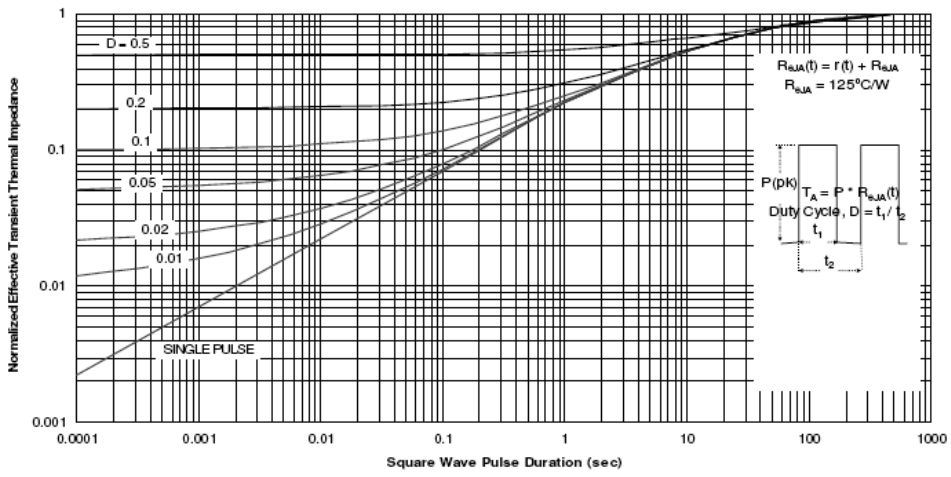
Source-Drain Diode Forward Voltage



On-Resistance vs.Gate-to Source Voltage







Normalized Thermal Transient Impedance, Junction-to-Ambient

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