

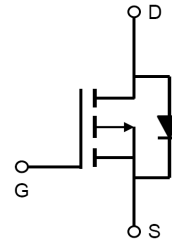
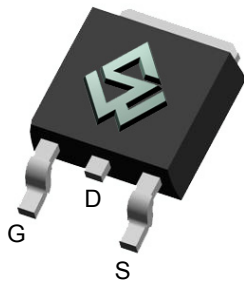
**60V Single P-Channel Enhancement-Mode MOSFET****General Description**

- Low gate charge.
- Uses advanced trench process technology.
- Use in PWM applications

Product Summary

- BV_{DSS} -60V
- $R_{DS(on)}$ @VGS = -10V < 58mΩ
- $R_{DS(on)}$ @VGS = -4.5V < 67mΩ

TO-252 D-PAK

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

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current ($T_A=25^\circ\text{C}$)	I_D	-20	A
Drain Current ($T_A=75^\circ\text{C}$)		-15	A
Pulsed Drain Current ^a	I_{DM}	-60	A
Power Dissipation ^b ($T_C=25^\circ\text{C}$)	P_D	25	W
Power Dissipation ^b ($T_A=25^\circ\text{C}$)		2.5	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Maximum	Units
Junction-to-Ambient ^a ($t \leq 10\text{s}$)	$R_{\theta JA}$	25	$^\circ\text{C/W}$
Junction-to-Ambient ^{a,d} (Steady-State)		50	$^\circ\text{C/W}$
Junction-to-Lead (Steady-State)	$R_{\theta JL}$	5	$^\circ\text{C/W}$



Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-60			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -60V, V_{GS} = 0V$			-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-2		-4	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS} = -10V, I_D = -20A$		48	58	$\text{m}\Omega$
		$V_{GS} = -4.5V, I_D = -15A$		56	67	$\text{m}\Omega$
g_{FS}	Forward Transconductance	$V_{DS} = -10V, I_D = -15A$		15		S
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	$V_{GS} = 0V, I_S = -25A$			-1.3	V
I_S	Maximum Body-Diode Continuous Current				-20	A
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS} = -30V, V_{GS} = 0V$ $f = 1.0\text{MHz}$		896		pF
C_{oss}	Output Capacitance			142		pF
C_{rss}	Reverse Transfer Capacitance			83		pF
Switching Characteristics						
Q_g	Total Gate Charge	$V_{DS} = -30V, I_D = -20A$ $V_{GS} = -10V$		5.4		nC
Q_{gs}	Gate-Source Charge			3.5		nC
Q_{gd}	Gate-Drain Charge			2.3		nC
$t_{D(ON)}$	Turn-On Delay Time	$V_{DD} = -30V, I_D = -20A$ $V_{GS} = -10V$ $R_{GEN} = -3\text{ohm}$		2.7		ns
t_r	Turn-On Rise Time			8.5		ns
$t_{D(OFF)}$	Turn-Off Delay Time			33.5		ns
t_f	Turn-Off Fall Time			6		ns

- Repetitive rating, Pulse width limited by junction temperature $T_{J(MAX)}=150^\circ\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^\circ\text{C}$
- The power dissipation P_D is based on $T_{J(MAX)}=150^\circ\text{C}$, using $\leq 10\text{s}$ junction-to-ambient thermal resistance.
- The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The value in any given application depends on the user's specific board design.
- The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.



Typical Characteristics

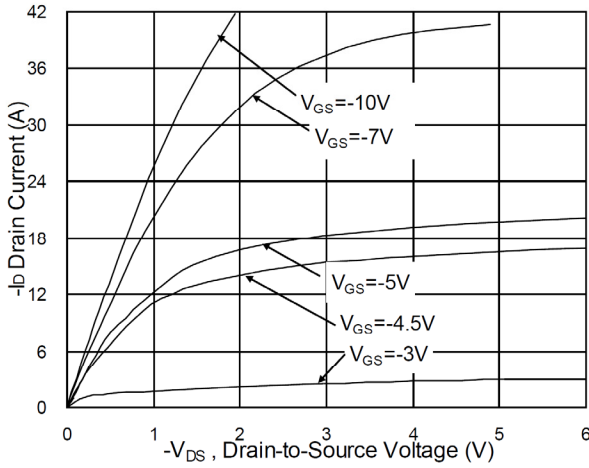


Fig.1 Typical Output Characteristics

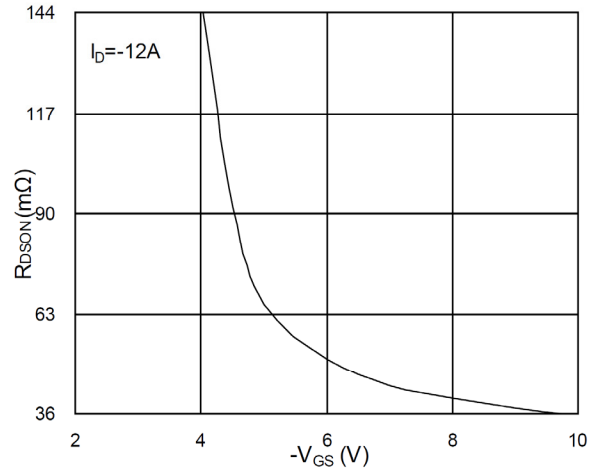


Fig.2 On-Resistance v.s Gate-Source

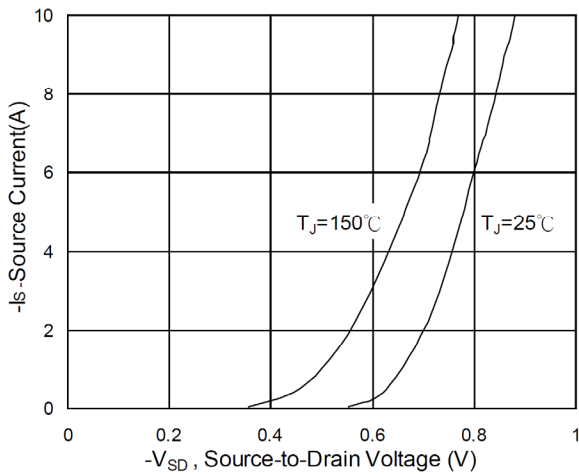


Fig.3 Forward Characteristics Of Reverse

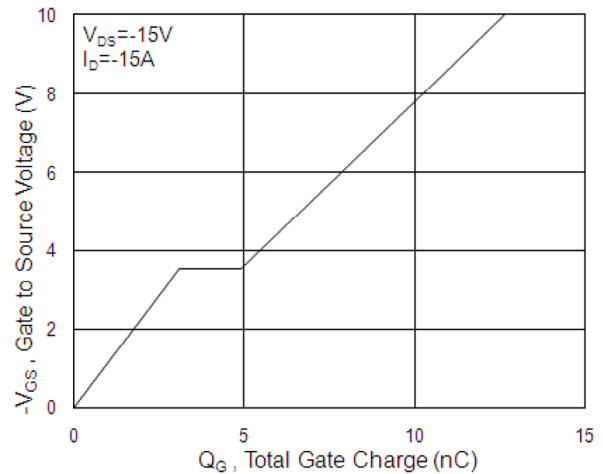


Fig.4 Gate Charge Characteristics

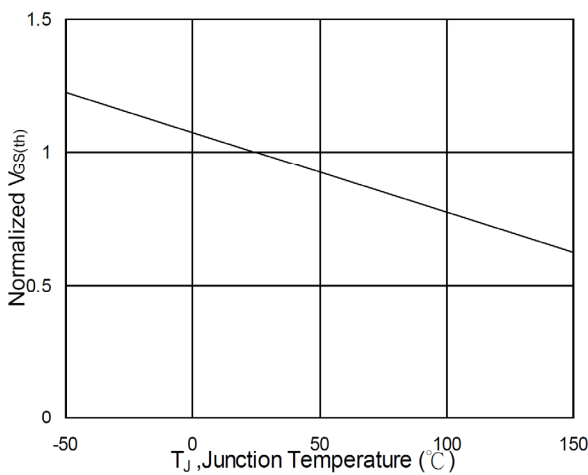


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

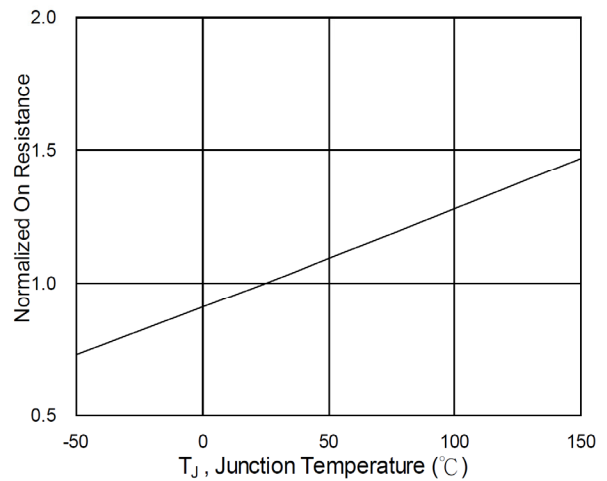


Fig.6 Normalized $R_{DS(on)}$ vs. T_J



Typical Characteristics

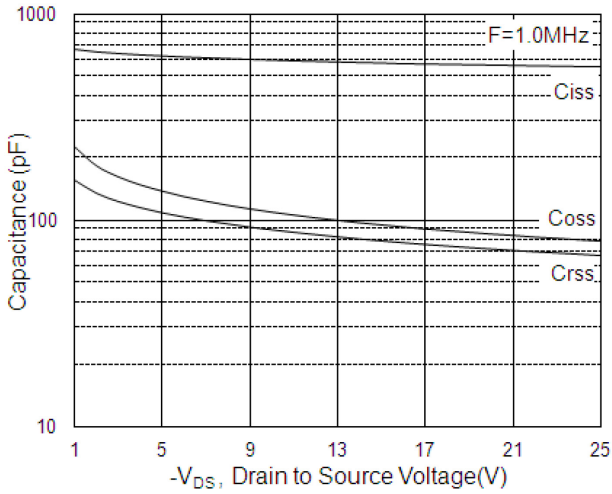


Fig.7 Capacitance

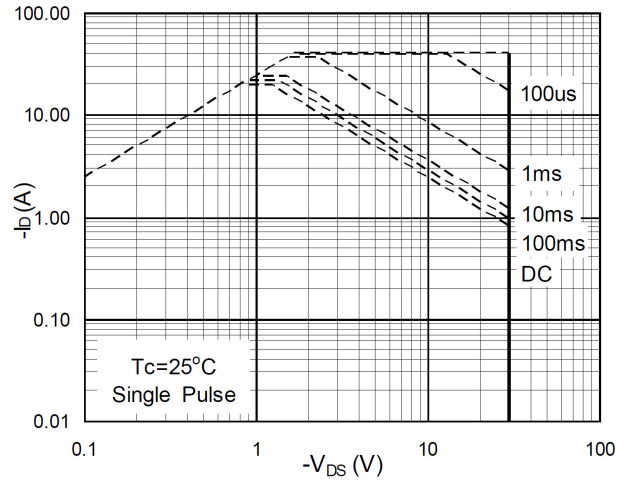


Fig.8 Safe Operating Area

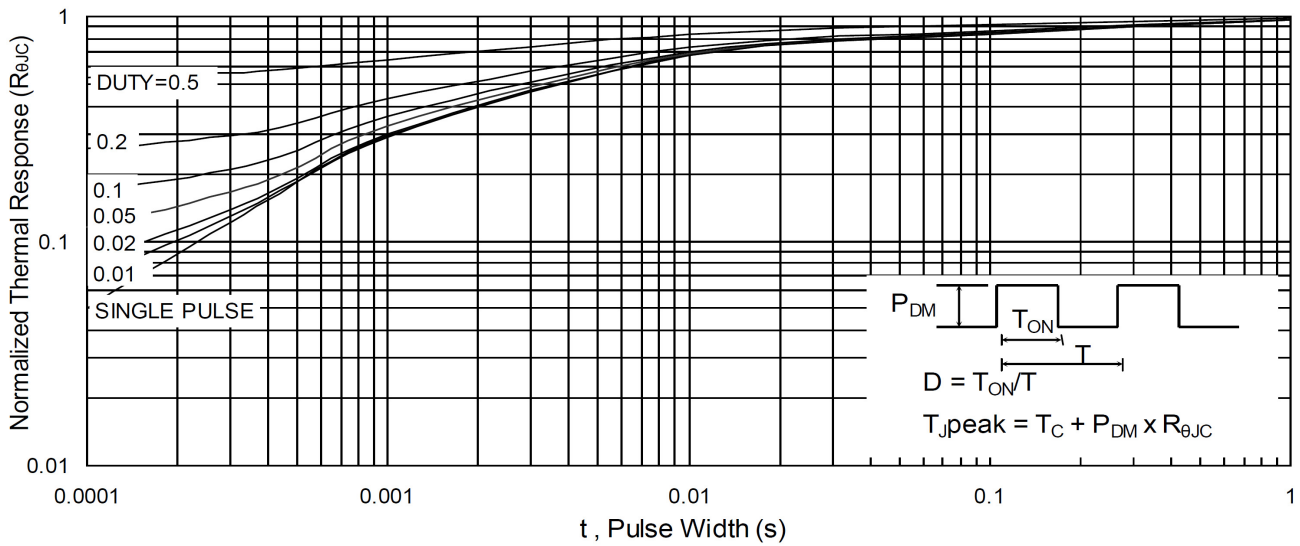
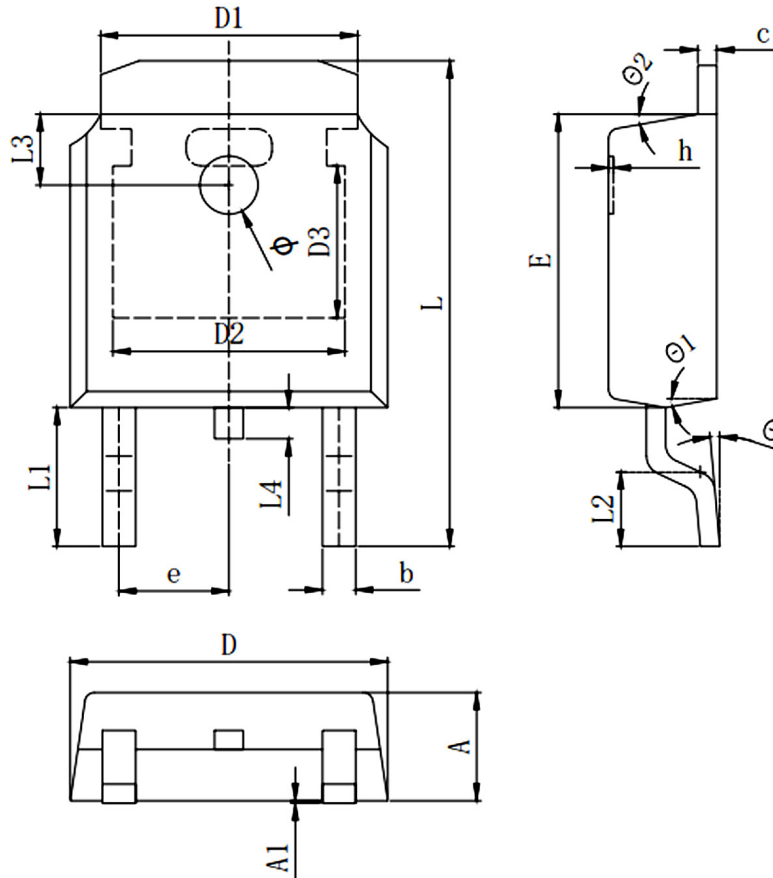


Fig.9 Normalized Maximum Transient Thermal Impedance



TO-252 D-PAK Package



Symbols	Millimeters		
	MIN.	Mom.	MAX.
A	2.200	2.300	2.400
A1	0.000		0.127
b	0.640	0.690	0.740
c(电镀后)	0.460	0.520	0.580
D	6.500	6.600	6.700
D1	5.334 REF		
D2	4.826 REF		
D3	3.166REF		
E	6.000	6.100	6.200
e	2.286 TYP		
h	0.000	0.100	0.200
L	9.900	10.100	10.300
L1	2.888 REF		
L2	1.400	1.550	1.700
L3	1.600 REF		
L4	0.600	0.800	1.000
Φ	1.100	1.200	1.300
θ	0°		8°
θ_1	9° TYP		
θ_2	9° TYP		

单击下面可查看定价，库存，交付和生命周期等信息

[>>SiliconWisdom\(矽睿半导体\)](#)