

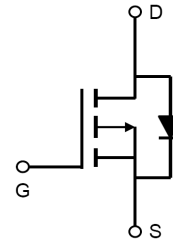
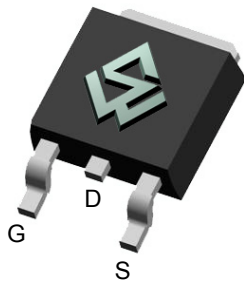
**60V Single P-Channel Enhancement-Mode MOSFET****General Description**

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

Product Summary

- BV_{DSS} -60V
- $R_{DS(on)}$ @VGS = -10V < 28m Ω
- $R_{DS(on)}$ @VGS = -4.5V < 34m Ω

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	-45	A
Drain Current ($T_A=75^\circ\text{C}$)		-25	A
Pulsed Drain Current ^a	I_{DM}	-70	A
Power Dissipation ^b ($T_C=25^\circ\text{C}$)	P_D	52	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 ($t \leq 10\text{s}$)	$R_{\theta JA}$	28	$^\circ\text{C/W}$
Junction-to-Ambient ^{a,d} (Steady-State)		60	$^\circ\text{C/W}$
Junction-to-Lead (Steady-State)	$R_{\theta JL}$	5	$^\circ\text{C/W}$



Electrical Characteristics (T _A = 25°C unless otherwise noted)						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V , I _D = -250uA	-60			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -60V , V _{GS} = 0V			-1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250uA	-1.0		-2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} = -10V , I _D = -20A		24	28	mΩ
		V _{GS} = -4.5V , I _D = -15A		25	34	mΩ
g _{FS}	Forward Transconductance	V _{DS} = -10V , I _D = -15A		25		S
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} = 0V , I _S = -45A			-1.3	V
I _S	Maximum Body-Diode Continuous Current				-45	A
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -30V , V _{GS} = 0V f = 1.0MHz		3896		pF
C _{oss}	Output Capacitance			242		pF
C _{rss}	Reverse Transfer Capacitance			143		pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} = -30V , I _D = -20A V _{GS} = -10V		24		nC
Q _{gs}	Gate-Source Charge			6.5		nC
Q _{gd}	Gate-Drain Charge			5.3		nC
t _{D(ON)}	Turn-On Delay Time	V _{DD} = -30V , I _D = -20A V _{GS} = -10 V R _{GEN} = -3 ohm		39		ns
t _r	Turn-On Rise Time			23.5		ns
t _{D(OFF)}	Turn-Off Delay Time			102		ns
t _f	Turn-Off Fall Time			7.6		ns

- a. Repetitive rating, Pulse width limited by junction temperature T_{J(MAX)}=150 °C. Ratings are based on low frequency and duty cycles to keep initial T_J=25 °C
- b. The power dissipation P_D is based on T_{J(MAX)}=150 °C , using ≤10s junction-to-ambient thermal resistance.
- c. The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C. The value in any given application depends on the user's specific board design.
- d. The R_{θJA} is the sum of the thermal impedance from junction to lead R_{θJL} and lead to ambient.



Typical Characteristics

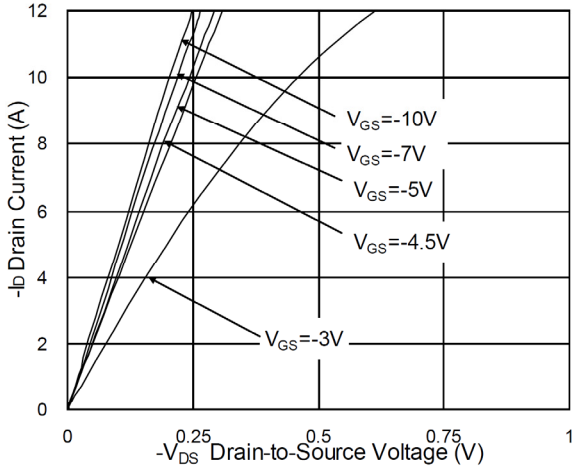


Fig.1 Typical Output Characteristics

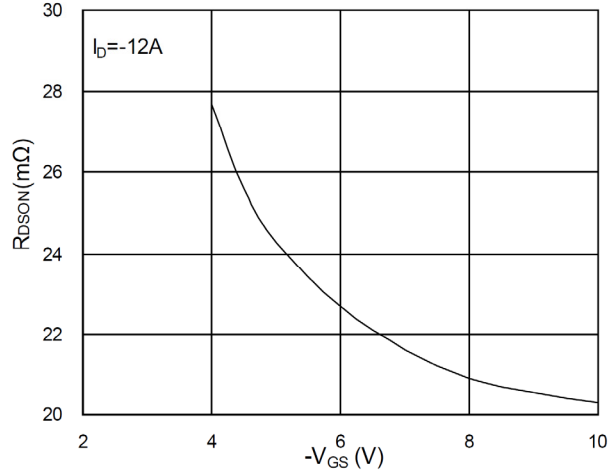


Fig.2 On-Resistance v.s Gate-Source

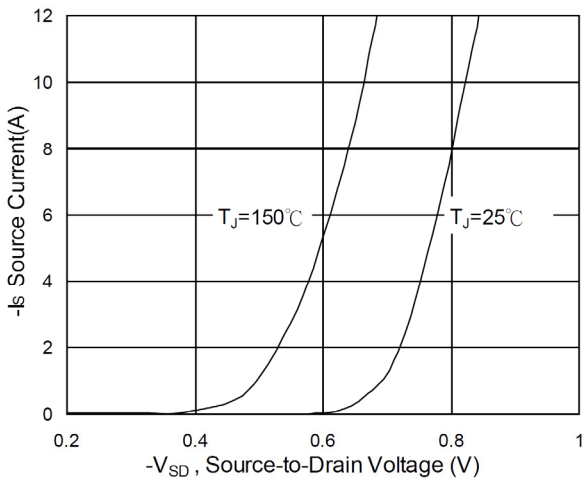


Fig.3 Forward Characteristics Of Reverse

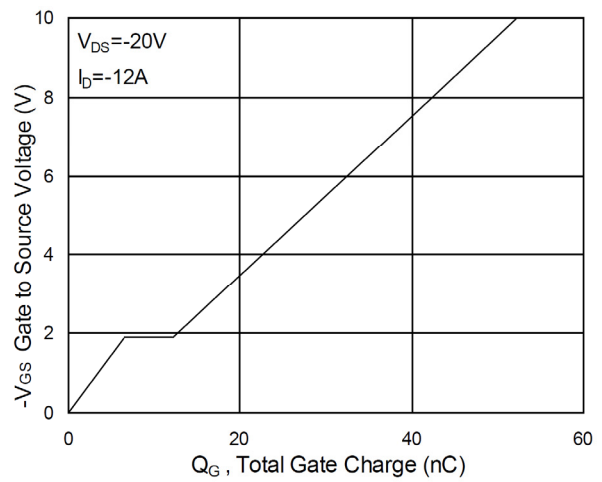


Fig.4 Gate-Charge Characteristics

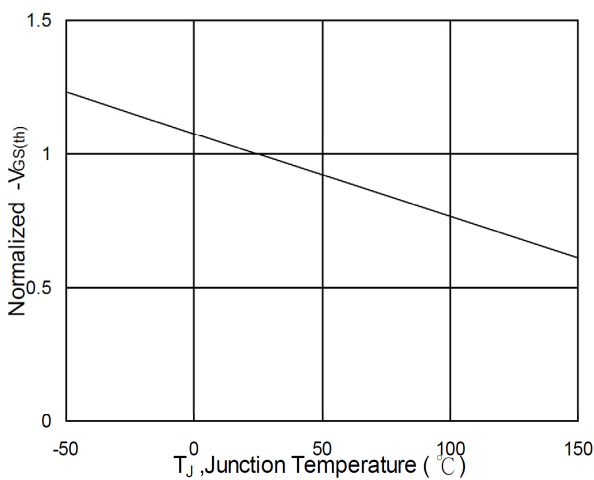


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

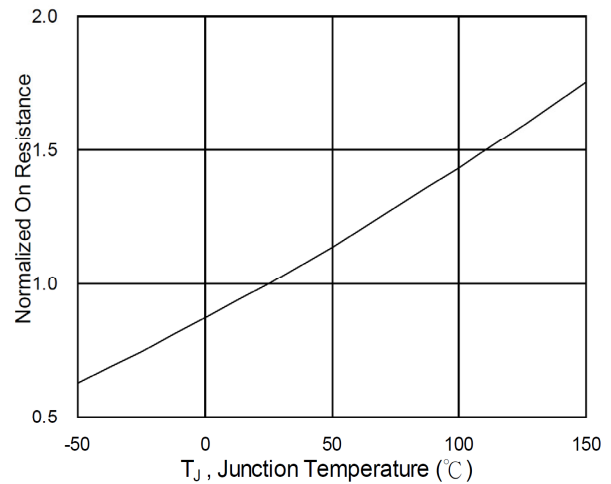


Fig.6 Normalized $R_{DS(on)}$ v.s T_J



Typical Characteristics

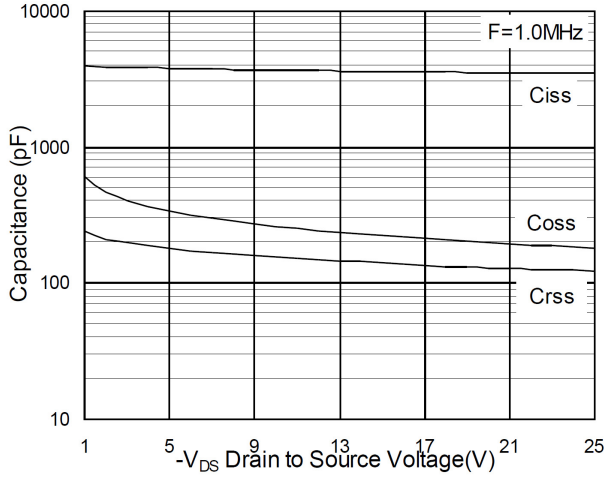


Fig.7 Capacitance

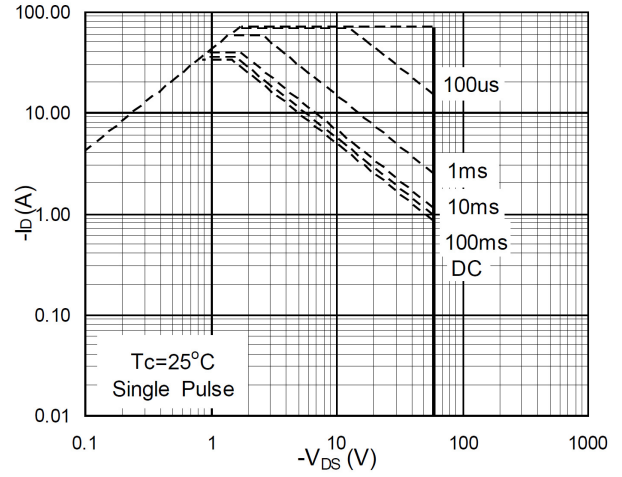


Fig.8 Safe Operating Area

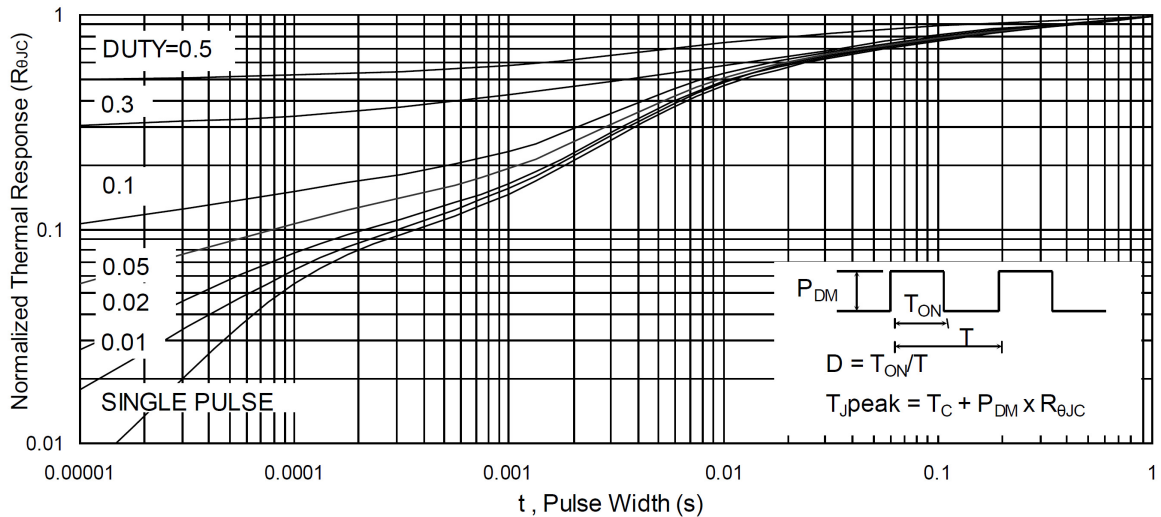
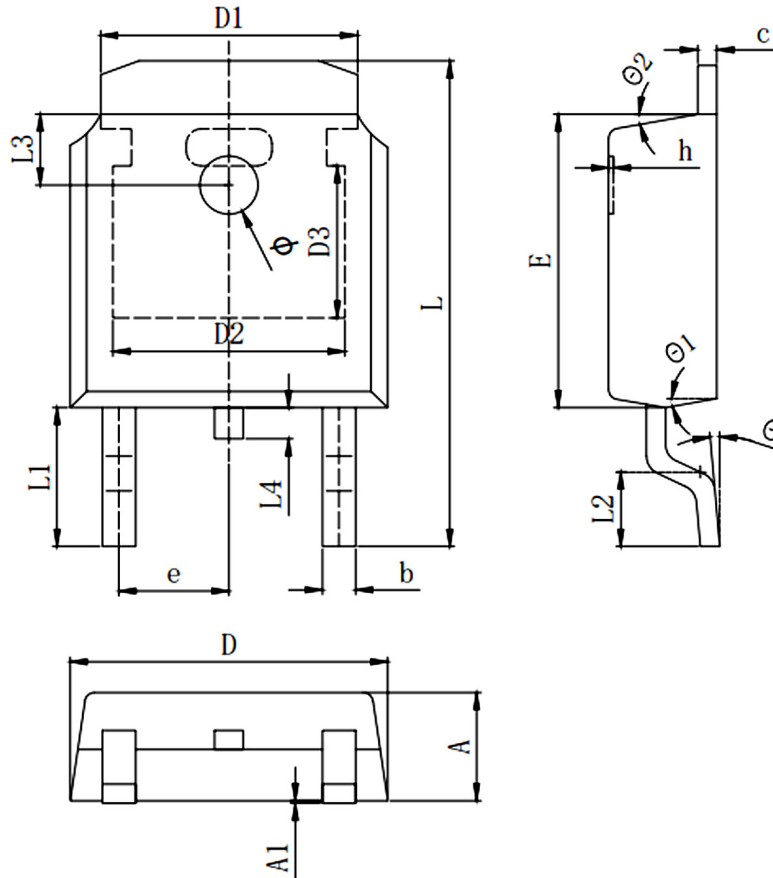


Fig.9 Normalized Maximum Transient Thermal Impedance



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\(矽睿半导体\)](#)