SWR15P06

60V Single P-Channel Enhancement-Mode MOSFET

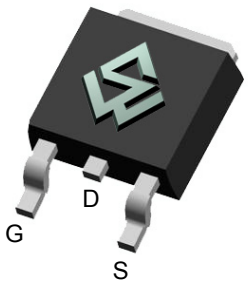
General Description

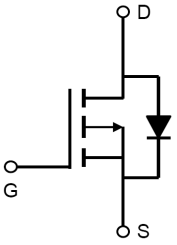
- Low gate charge.
- Uses advanced trench process technology.
- Use in PWM applications

Product Summary

- BV_{DSS} -60V
- $R_{DS(on)}$ @VGS = -10V < 90mΩ
- $R_{DS(on)}$ @VGS = -4.5V < 115mΩ

TO-252 D-PAK





Absolute Maximum Ratings (T_A = 25°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=25ºC)	I_D	-15	A
Drain Current (T_A=75ºC)		-8.5	A
Pulsed Drain Current [a]	I_{DM}	-25	A
Power Dissipation [b] (T_C=25ºC)	P_D	24	W
Power Dissipation [b] (T_A=25ºC)		2.5	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	ºC

Thermal Characteristics

Parameter	Symbol	Maximum	Units
Junction-to-Ambient [a] (t ≤ 10s)	$R_{\theta JA}$	25	ºC/W
Junction-to-Ambient [a,d] (Steady-State)		62	ºC/W
Junction-to-Lead (Steady-State)	$R_{\theta JL}$	5	ºC/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	-2		-4	V
$R_{DS(ON))}$	Drain-Source On-State Resistance	V_{GS} = -10V , I_D = -10A		70	90	mΩ
		V_{GS} = -4.5V , I_D = -5A		85	115	mΩ
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 = -15A			-1.3	V
I_S	Maximum Body-Diode Continuous Current				-15	A
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = -30V , V_{GS} = 0V f = 1.0MHz		996		pF
C_{oss}	Output Capacitance			92		pF
C_{rss}	Reverse Transfer Capacitance			73		pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS} = -30V , I_D = -6A V_{GS} = -10V		11.4		nC
Q_{gs}	Gate-Source Charge			1.5		nC
Q_{gd}	Gate-Drain Charge			6.3		nC
$t_{D(ON)}$	Turn-On Delay Time	V_{DD} = -30V , ID = -6A V_{GS} = -10 V R_{GEN} = -3 ohm		8.8		ns
t_r	Turn-On Rise Time			18.5		ns
$t_{D(OFF)}$	Turn-Off Delay Time			43.5		ns
t_f	Turn-Off Fall Time			9.6		ns

a. Repetitive rating, Pulse width limited by junction temperature $T_{J(MAX)}$=150 ºC. Ratings are based on low frequency and duty cycles to keep initial T_J=25 ºC

b. The power dissipation P_D is based on $T_{J(MAX)}$=150 ºC , using≤10s junction-to-ambient thermal resistance.

c. 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°C. The value in any given application depends on the user's specific board design.

d. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ and lead to ambient.

Typical Characteristics

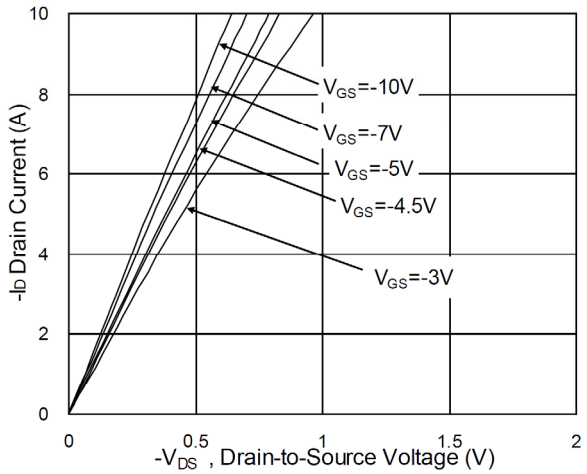


Fig.1 Typical Output Characteristics

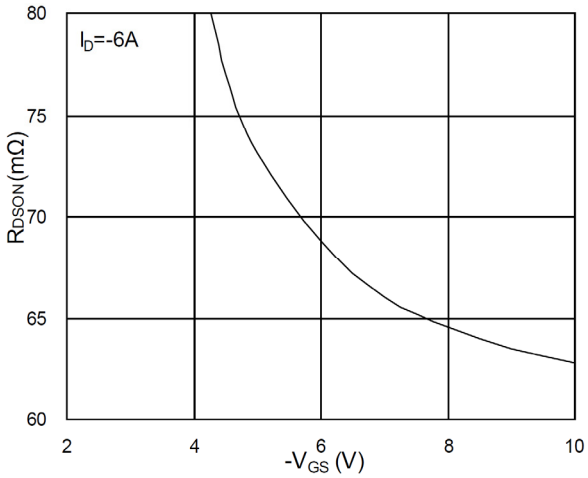


Fig.2 On-Resistance v.s Gate-Source

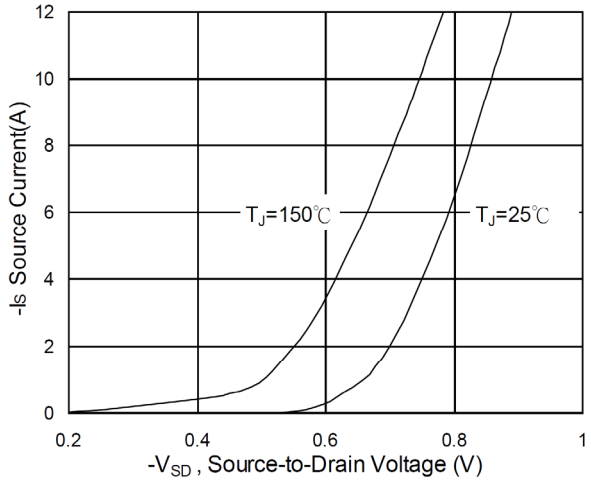


Fig.3 Forward Characteristics of Reverse

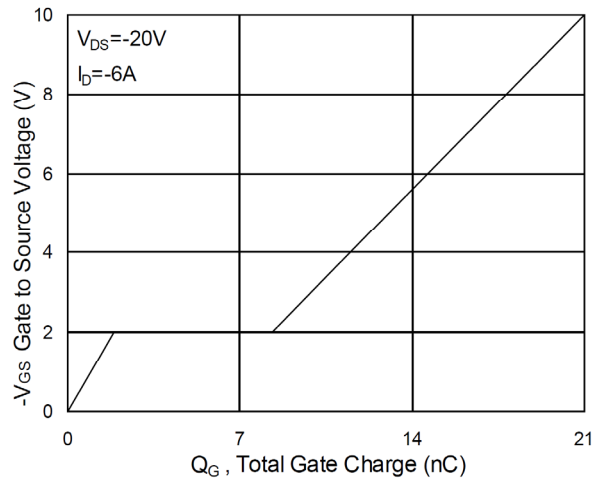


Fig.4 Gate-Charge Characteristics

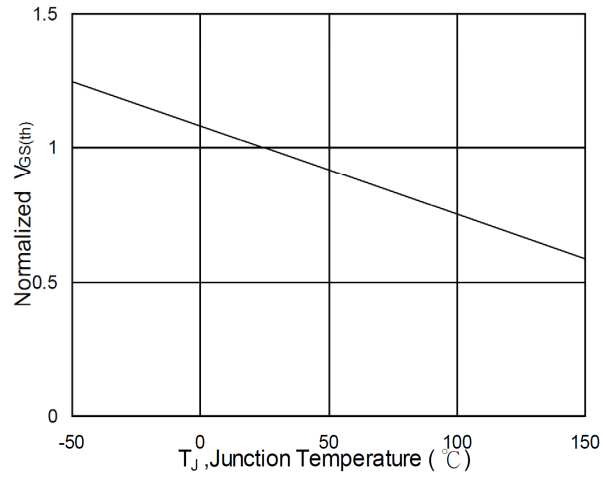


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

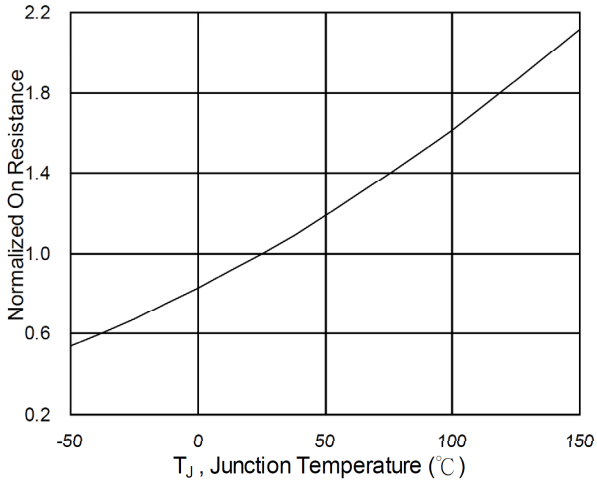


Fig.6 Normalized R_{DSON} v.s T_J

Typical Characteristics

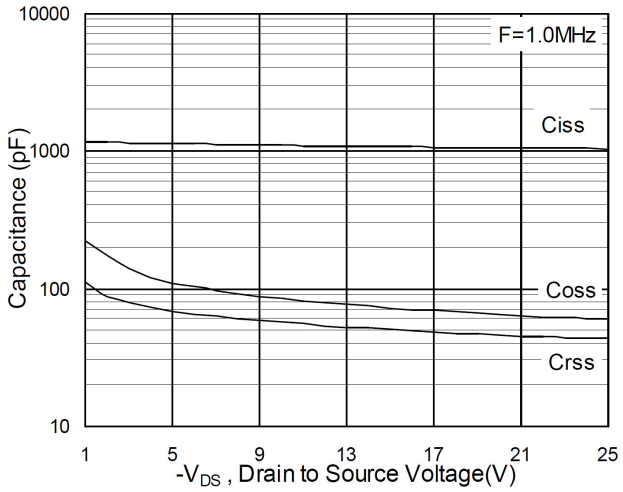


Fig.7 Capacitance

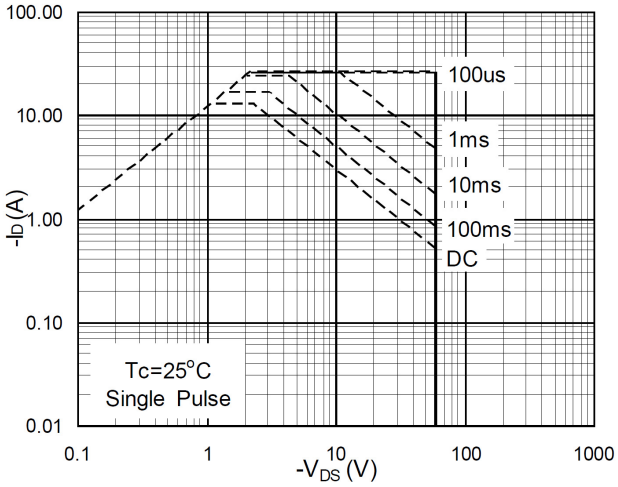


Fig.8 Safe Operating Area

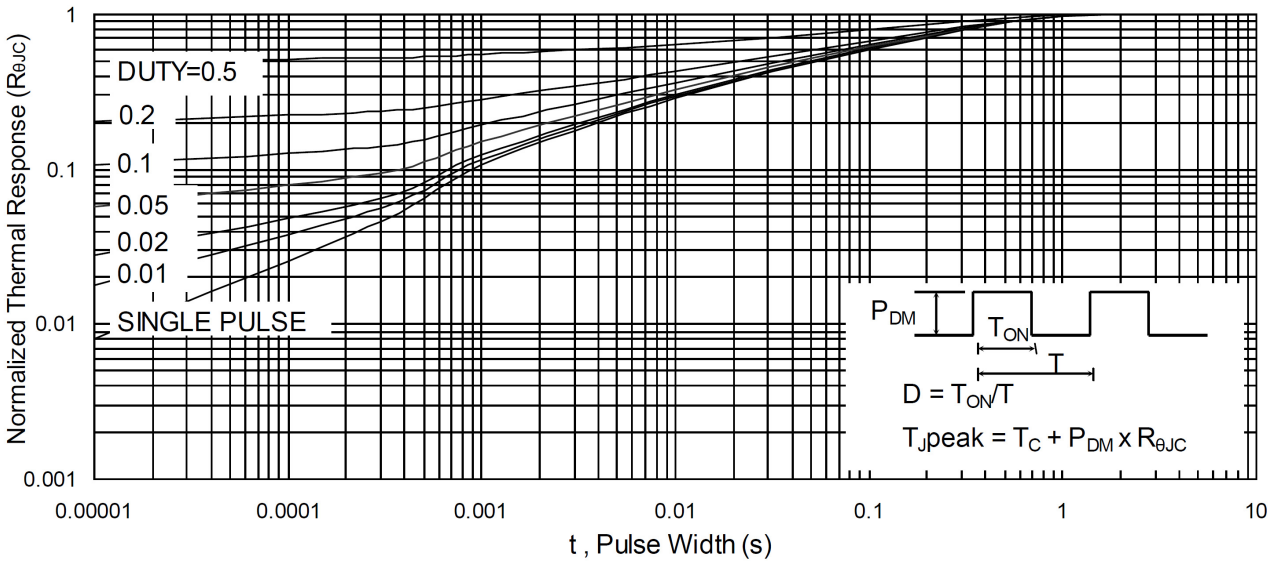
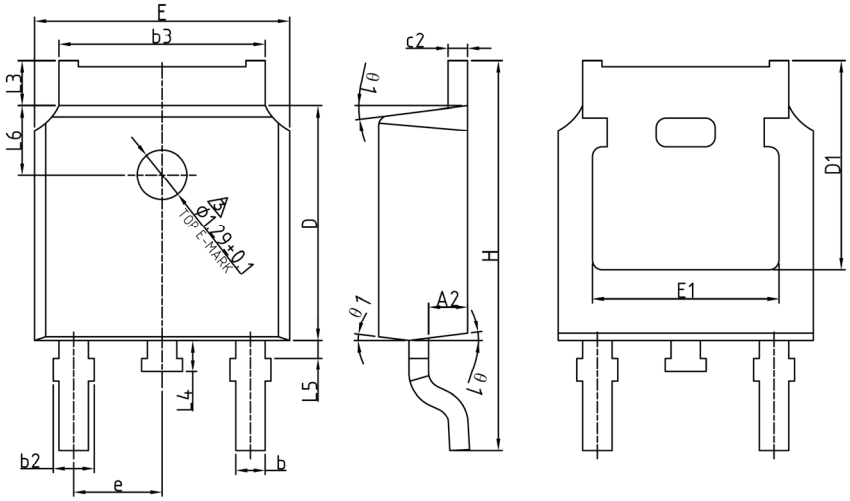
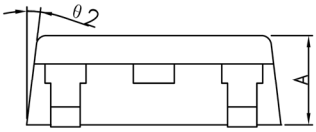
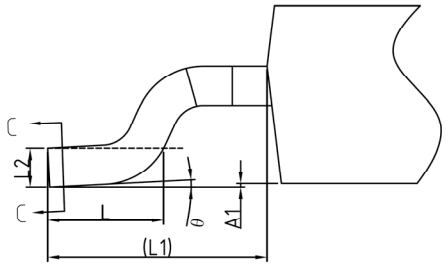


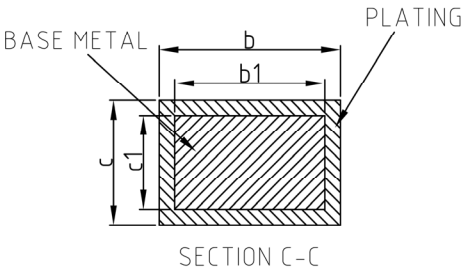
Fig.9 Normalized Maximum Transient Thermal Impedance

TO-252 D-PAK Package









COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

	SYMBOL	MIN	NOM	MAX
	A	2.20	2.30	2.38
	A1	0	–	0.10
2	A2	0.90	1.01	1.10
	b	0.72	–	0.85
	b1	0.71	0.76	0.81
	b2	0.72	–	0.90
	b3	5.13	5.33	5.46
	c	0.47	–	0.60
	c1	0.46	0.51	0.56
	c2	0.47	–	0.60
	D	6.00	6.10	6.20
	D1	5.25	–	–
	E	6.50	6.60	6.70
	E1	4.70	–	–
	e	2.186	2.286	2.386
	H	9.80	10.10	10.40
	L	1.40	1.50	1.70
	L1	2.90REF		
	L2	0.51BSC		
	L3	0.90	–	1.25
	L4	0.60	0.80	1.00
	L5	0.15	–	0.75
	L6	1.80REF		
	θ	0°	–	8°
2	θ 1	5°	7°	9°
2	θ 2	5°	7°	9°

NOTES:
ALL DIMENSIONS REFER TO JEDEC STAND/
TO-252 AA DO NOT INCLUDE MOLD FLAS
OR PROTRUSIONS.

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)