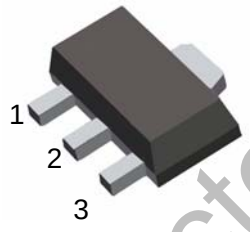
WGZK3

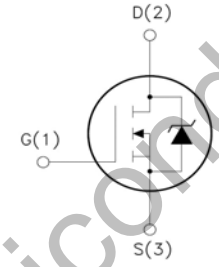
Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg=12nC (Typ.).
- ☐ BVDSS=200V,I_D=5A
- ☐ R_{DS}(on) : 0.58 Ω (Max) @V_G=10V
- ☐ 100% Avalanche Tested

RoHS COMPLIANT

SOT-89





1.Gate (G)
2.Drain (D)
3.Source (S)

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	5	A
Drain Current-Pulsed (Note 1)	I_{DM}	8	A
Maximum Power Dissipation	P_D	3	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Thermal Characteristic

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	41.7	℃/W

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Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=200V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1.2	1.8	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=3A	-	514	580	mΩ
Forward Transconductance	g_{FS}	V_{DS}=15V,I_D=2A	-	8	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=25V,V_{GS}=0V, F=1.0MHz	-	580	-	PF
Output Capacitance	C_{oss}		-	90	-	PF
Reverse Transfer Capacitance	C_{rss}		-	3	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=100V, R_L=15Ω V_{GS}=10V,R_G=2.5Ω	-	10	-	nS
Turn-on Rise Time	t_r		-	12	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	15	-	nS
Turn-Off Fall Time	t_f		-	15	-	nS
Total Gate Charge	Q_g	V_{DS}=100V,I_D=2A, V_{GS}=10V	-	12		nC
Gate-Source Charge	Q_{gs}		-	2.5	-	nC
Gate-Drain Charge	Q_{gd}		-	3.8	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=5A	-	-	1.2	V
Diode Forward Current (Note 2)	I_S		-	-	5	A

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Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Characteristics

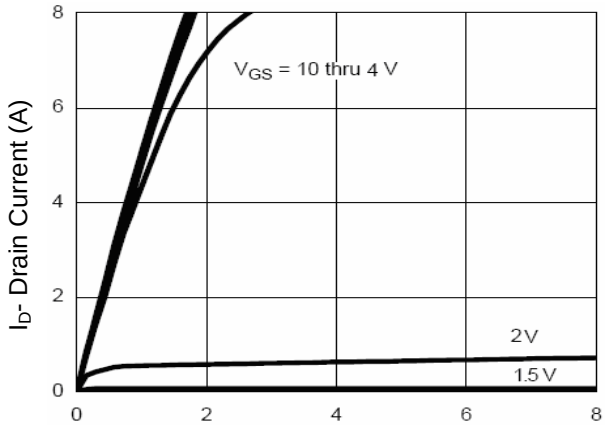


Figure 1 Output Characteristics

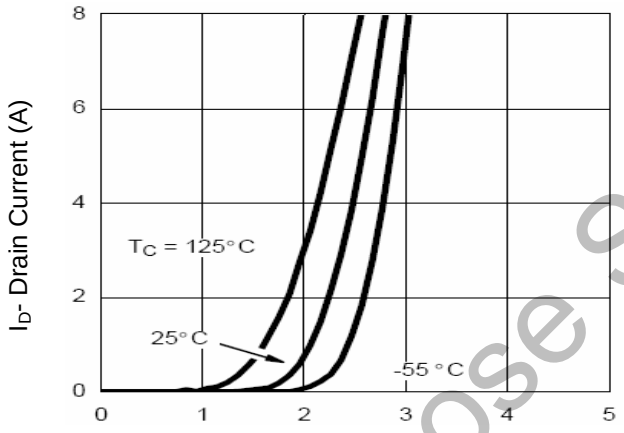


Figure 2 Transfer Characteristics

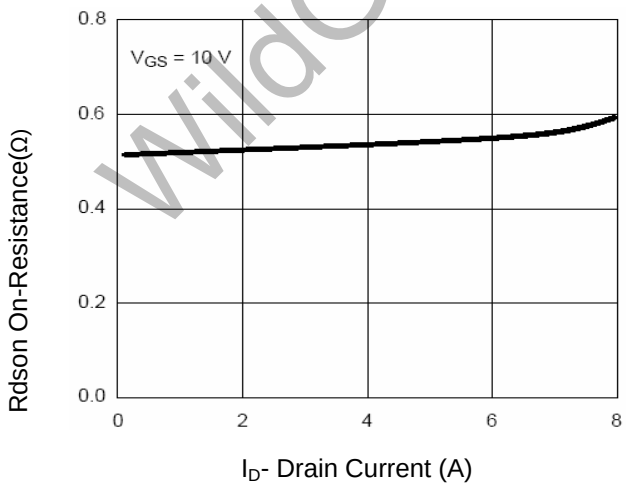


Figure 3 Rdson- Drain Current

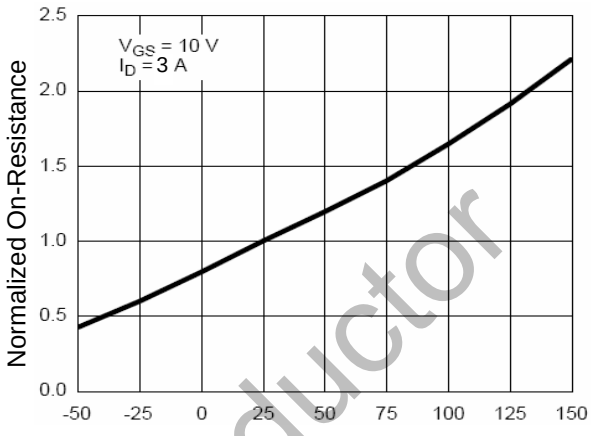


Figure 4 Rdson-JunctionTemperature

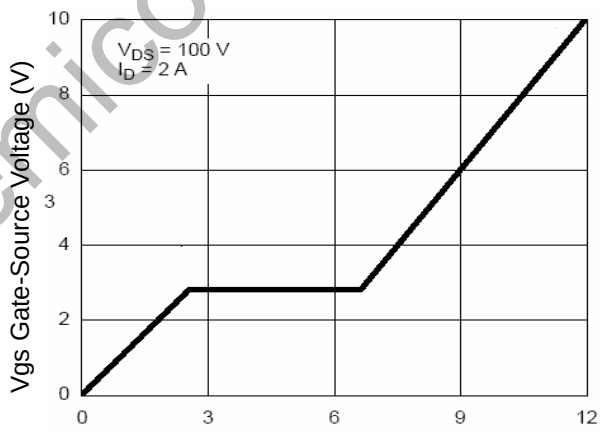


Figure 5 Gate Charge

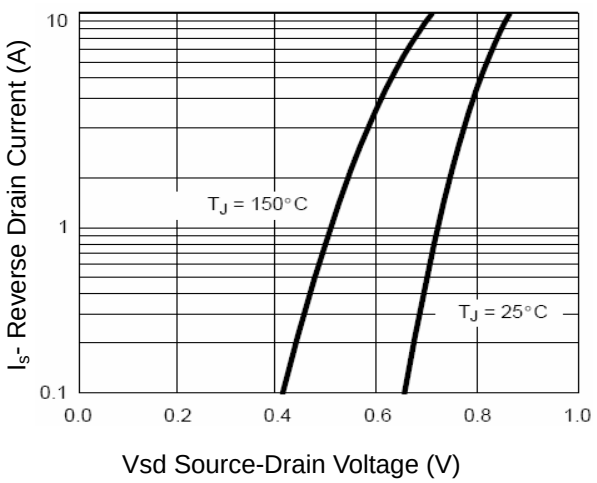
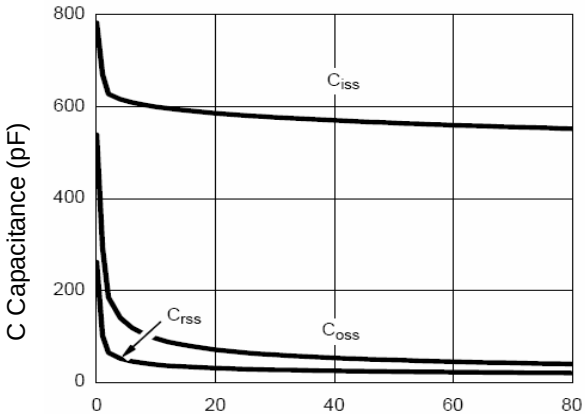


Figure 6 Source- Drain Diode Forward

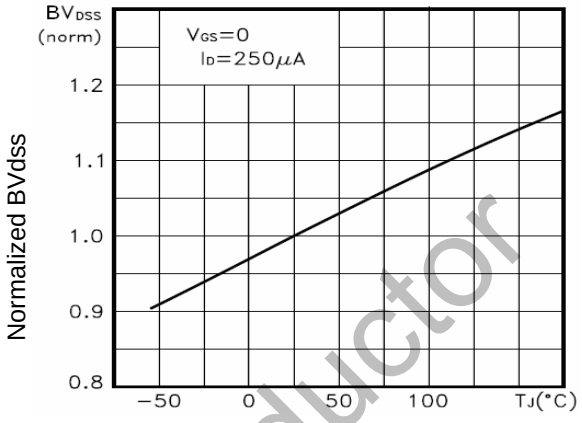
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Typical Characteristics (Continued)



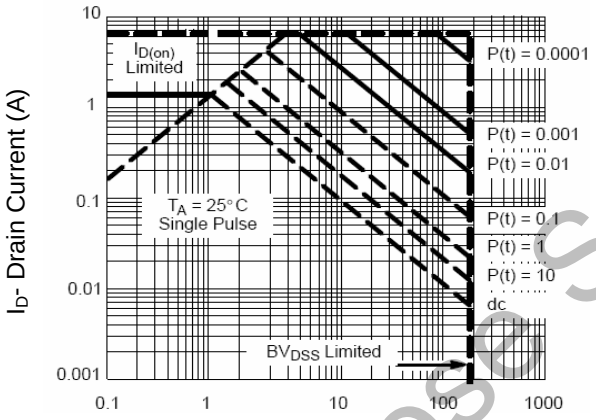
Vds Drain-Source Voltage (V)

Figure 7 Capacitance vs Vds



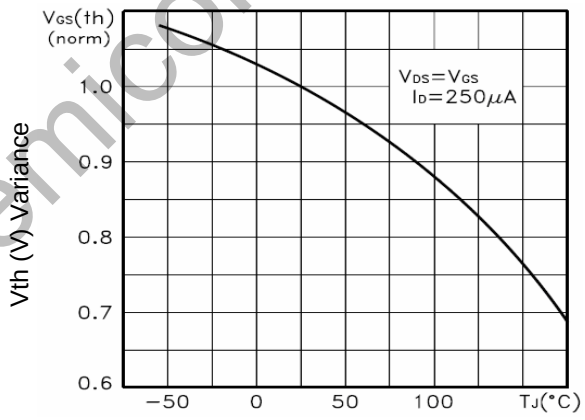
TJ-Junction Temperature(℃)

Figure 9 BV_{DSS} vs Junction Temperature



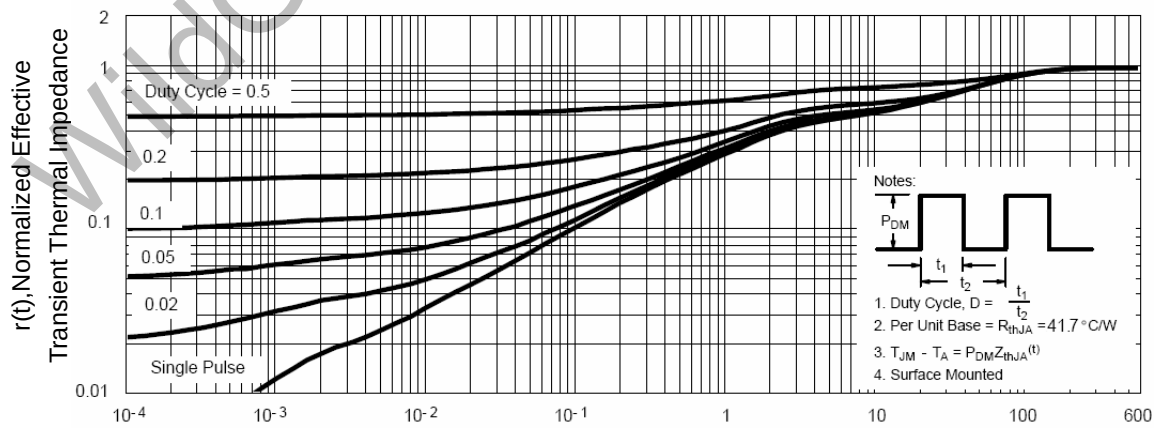
Vds Drain-Source Voltage (V)

Figure 8 Safe Operation Area



TJ-Junction Temperature(℃)

Figure 10 $V_{GS(th)}$ vs Junction Temperature



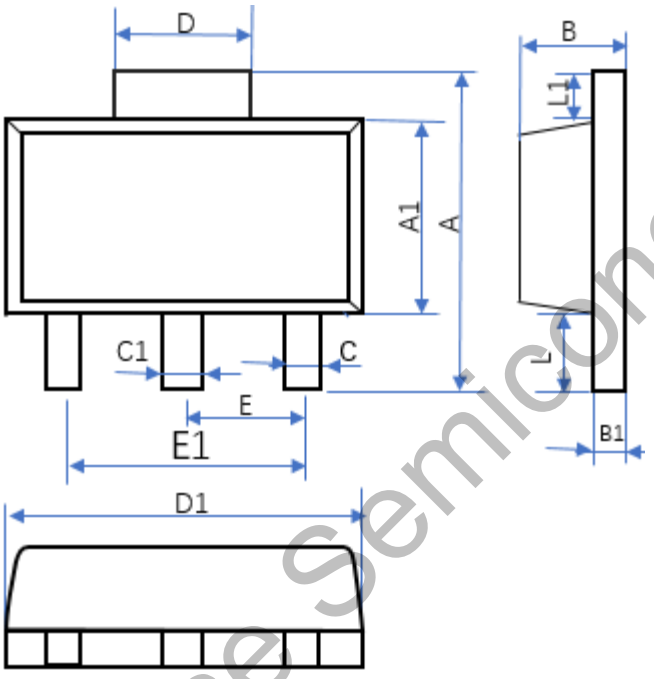
Square Wave Pluse Duration(sec)

Figure 11 Normalized Maximum Transient Thermal Impedance

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Package Dimension

SOT-89



Symbol	Size	+	-
A	4.10	-0.15	0.15
A1	2.50	-0.05	0.05
B	1.49	-0.05	0.05
B1	0.40	-0.05	0.05
C	0.40	-0.05	0.05
C1	0.50	-0.05	0.05
D	1.70	-0.05	0.05
D1	4.50	-0.05	0.05
E	1.50	-0.05	0.05
E1	3.00	-0.05	0.05
L	1.02	-0.05	0.05
L1	0.60	-0.05	0.05

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