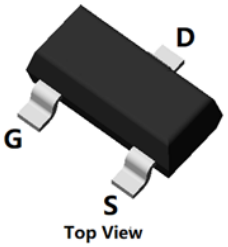
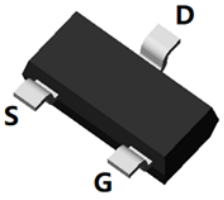
N-Channel Enhancement Mode Field Effect Transistor

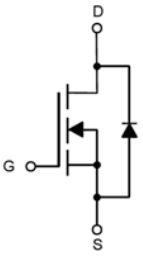


Top View



Bottom View

SOT-23



Product Summary

- V_{DS} 600V
- I_D 100mA
- $R_{DS(ON)}$(at V_{GS}=10V) ＜260Ω

General Description

- High density cell design for low RDS(ON)
- High Speed switching
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Battery protection
- Load switch
- Power management

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

Parameter			Symbol	Limit	Unit
Drain-source Voltage			V_{DS}	600	V
Gate-source Voltage			V_{GS}	±15	V
Continuous Drain Current (Note 1,2)	Steady-State	T_A=25℃, V_{GS}= 10V	I_D	100	mA
		T_A=100℃, V_{GS}= 10V		63	
Pulsed Drain Current	T_C=25℃, t_p=100μs		I_{DM}	400	mA
Total Power Dissipation (Note 1,2)	Steady-State	T_A=25℃	P_D	2	W
		T_A=100℃		0.4	
Junction and Storage Temperature Range			T_J ,T_{STG}	-55～+150	℃

■Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient (Note 2)	Steady-State	$R_{\theta JA}$	52	62.5	℃/W

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
L001N60AJ	F2	01N60.	3000	30000	120000	7“ reel

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250μA	600	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V	-	-	1	μA
		V_{DS}=600V, V_{GS}=0V, Tj=150℃	-	-	100	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±15V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250μA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=100mA	-	176	260	Ω
Diode Forward Voltage	V_{SD}	I_S=100mA, V_{GS}=0V	-	-	1.2	V
Gate resistance	R_G	f=1MHz	-	11	-	Ω
Maximum Body-Diode Continuous Current	I_S		-	-	100	mA
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=200KHz	-	35.7	-	pF
Output Capacitance	C_{oss}		-	4.6	-	
Reverse Transfer Capacitance	C_{rss}		-	3.1	-	
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=480V, I_D=100mA	-	2.2	-	nC
Gate-Source Charge	Q_{gs}		-	0.2	-	
Gate-Drain Charge	Q_{gd}		-	0.6	-	
Reverse Recovery Charge	Q_{rr}	I_F=100mA, di/dt=100A/us	-	0.07	-	nC
Reverse Recovery Time	t_{rr}		-	250	-	ns
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DD}=300V, I_D=100mA R_{GEN}=25Ω	-	32.6	-	ns
Turn-on Rise Time	t_r		-	50.4	-	
Turn-off Delay Time	$t_{D(off)}$		-	67.8	-	
Turn-off fall Time	t_f		-	251.7	-	

Note：

1. The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
2. The value of $R_{\theta JA}$ is measured with the device mounted on the 40mm*40mm*1.1mm single layer FR-4 PCB board with 1 in^2 pad of 2oz. Copper, in the still air environment with TA =25℃.The maximum allowed junction temperature of 150℃. The value in any given application depends on the user's specific board design.

■Typical Electrical and Thermal Characteristics Diagrams

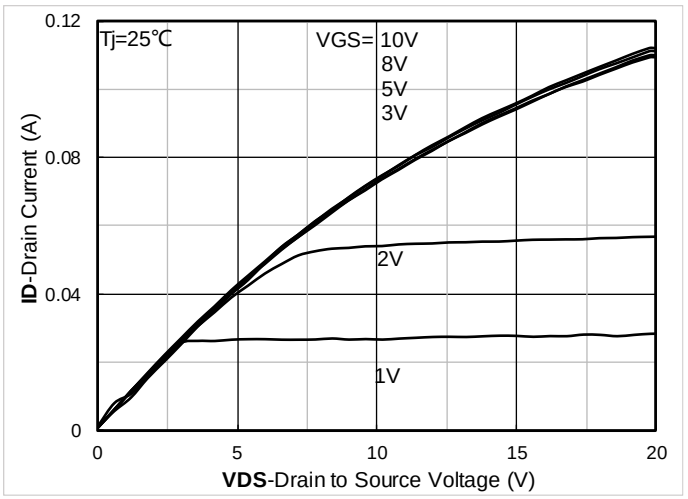


Figure 1. Output Characteristics

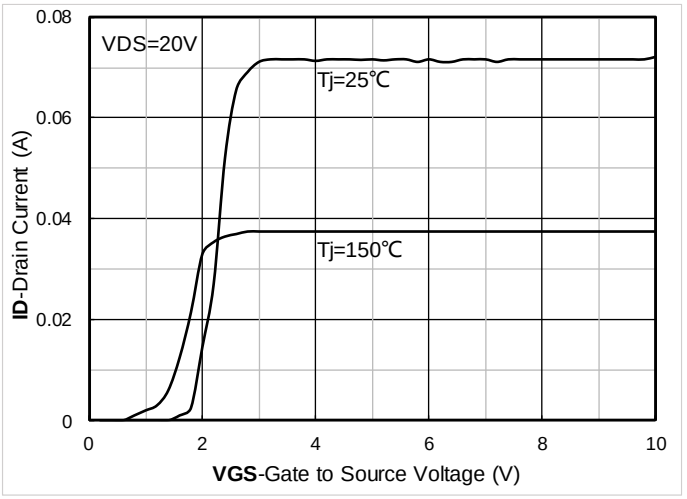


Figure 2. Transfer Characteristics

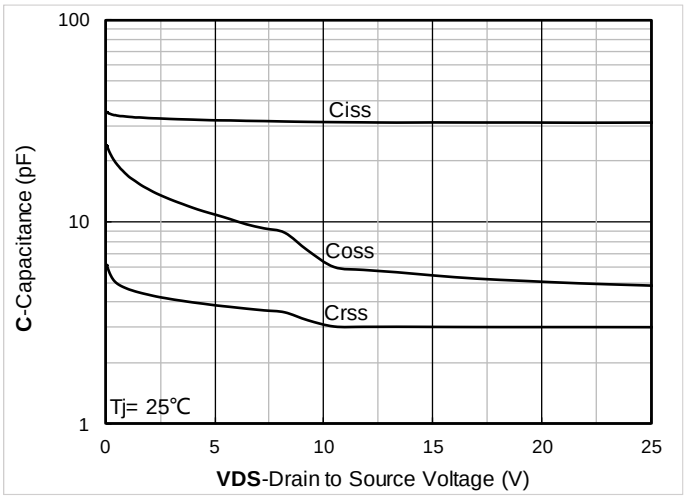


Figure 3. Capacitance Characteristics

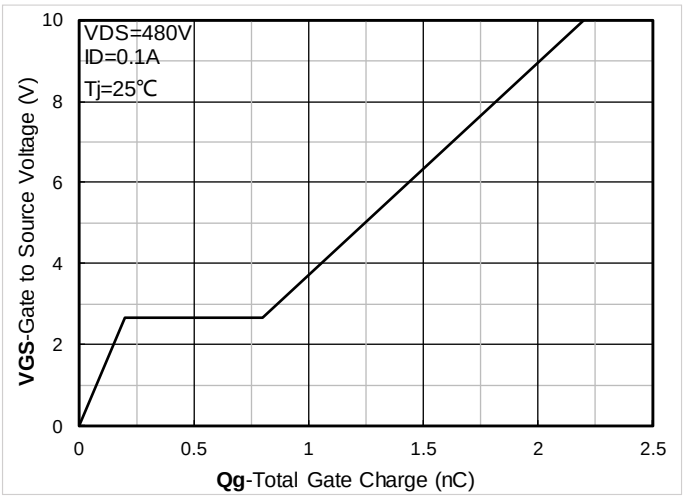


Figure 4. Gate Charge

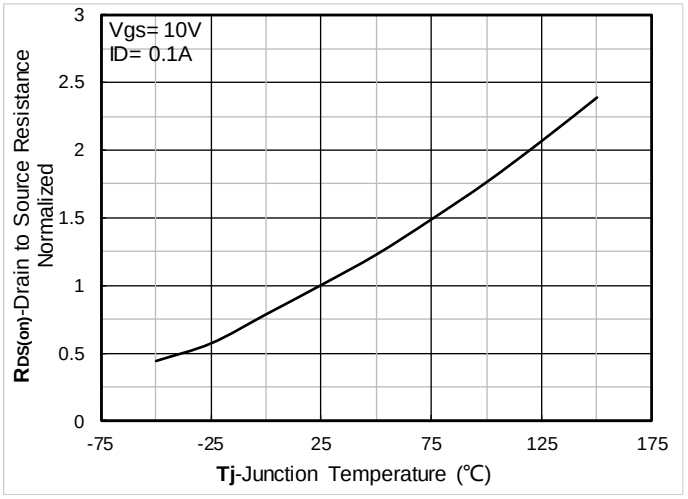


Figure 5. Normalized On-Resistance

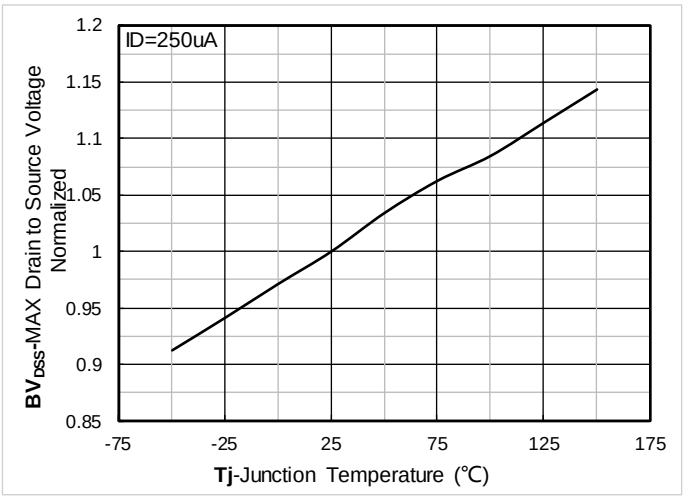


Figure 6. Normalized breakdown voltage

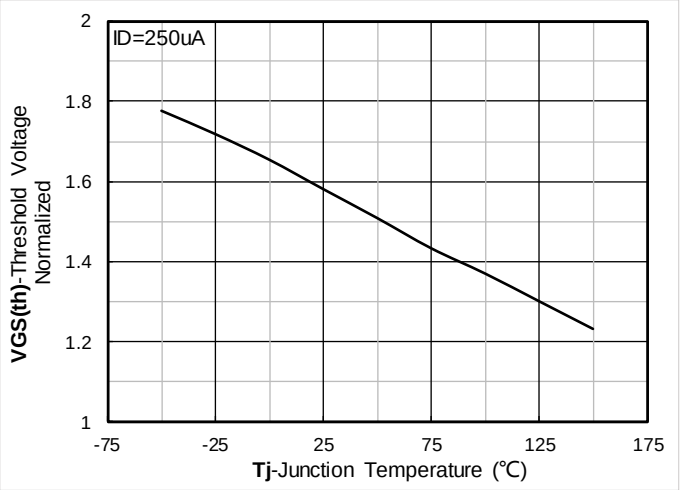


Figure 7. Normalized Threshold voltage

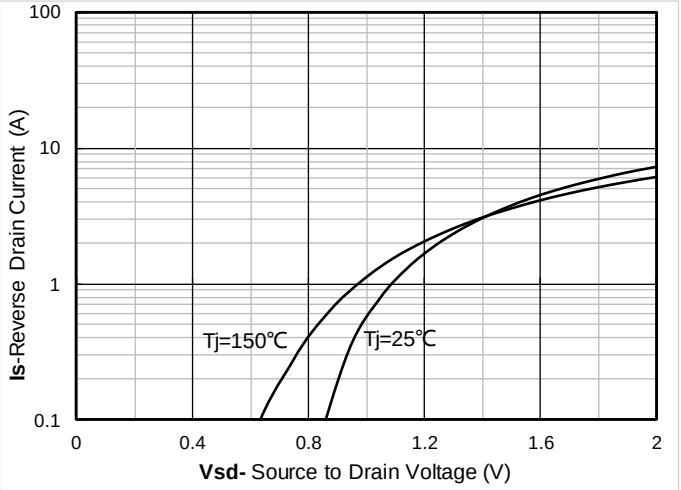


Figure 8. Forward characteristics of reverse diode

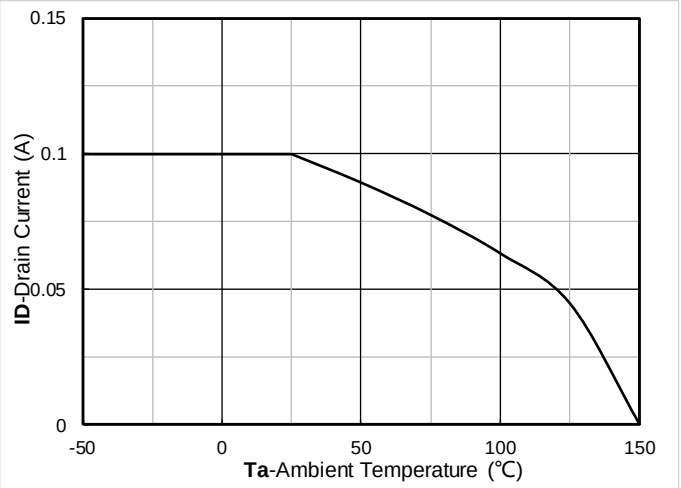


Figure 9. Current dissipation diode

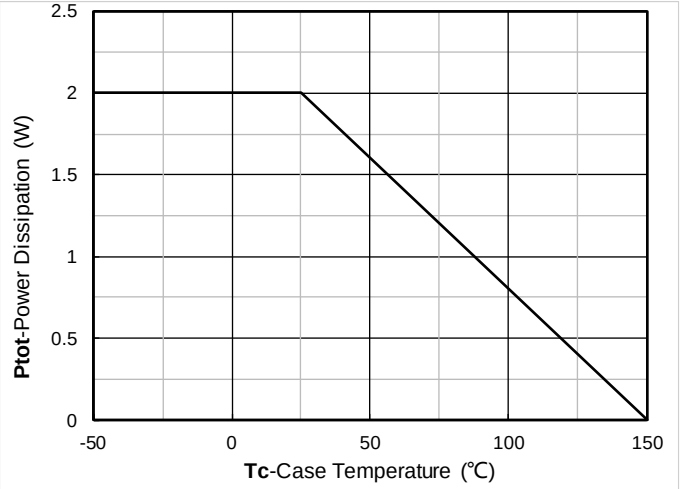
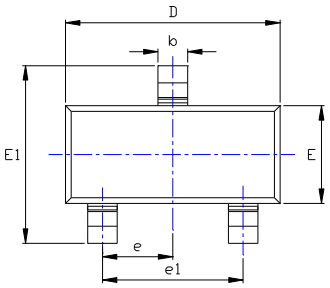
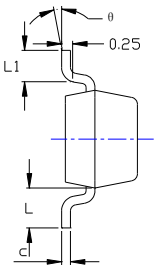


Figure 10. Power dissipation

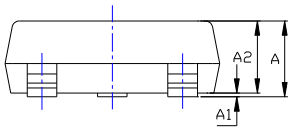
■ SOT-23 Package information



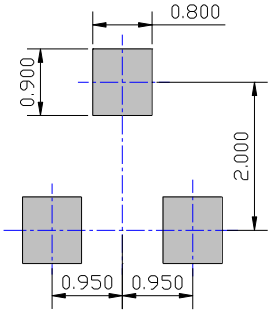
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

NOTE:
1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

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