

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=30V$
- $I_D=3.5A$
- $R_{DS(on)}@V_{GS}=10V < 39m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 59m\Omega$
- Advanced Trench Process Technology
- Low Threshold Voltage
- Fast Switching Speed

Applications

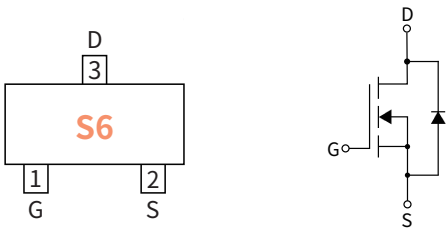
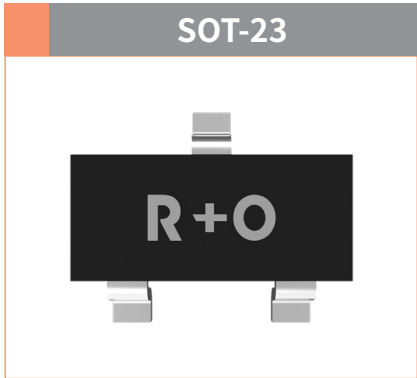
- Load Switch for Portable Devices
- Voltage controlled small signal switch
- Direct logic-level interface: TTL/CMOS

Mechanical Data

- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Reference News

Drain-source Voltage
30 V
Drain Current
3.5 Ampere



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	VALUE
Drain-source Voltage		V_{DS}	V	30
Gate-source Voltage		V_{GS}	V	± 20
Drain Current	$T_A=25^{\circ}C$ @ Steady State	I_D	A	3.5
	$T_A=70^{\circ}C$ @ Steady State			2.8
Pulsed Drain Current		I_{DM}	A	20
Total Power Dissipation @ $T_A=25^{\circ}C$		P_D	W	1.25
Thermal Resistance Junction-to-Ambient @ Steady State		$R_{\theta JA}$	$^{\circ}C / W$	100
Junction and Storage Temperature Range		T_J, T_{STG}	$^{\circ}C$	-55 ~+150

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

● Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	V	30	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	1.0	—	2.2
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.0A$	m Ω	—	29.5	39
		$V_{GS}=4.5V, I_D=2.0A$		—	44	59
Forward Transconductance	g_{fs}	$V_{DS}=5.0V, I_D=3.6A$	S	—	5.0	—
Diode Forward Voltage	V_{SD}	$I_S=3.0A, V_{GS}=0V$	V	—	—	1.2

● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$	pF	—	363	—
Output Capacitance	C_{oss}			—	49	—
Reverse Transfer Capacitance	C_{rss}			—	39	—

● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q _g	V _{GS} =10V V _{DS} =15V I _D =3.0A	nC	—	7.2	—
Gate-Source Charge	Q _{gs}			—	1.7	—
Gate-Drain Charge	Q _{gd}			—	1.0	—
Reverse Recovery Chrage	Q _{rr}	I _F =3.0A di/dt=100A/us		—	2.4	—
Reverse Recovery Time	t _{rr}		—	5.9	—	
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V V _{DS} =15V R _L =5.0Ω R _G =3.9Ω I _D =3.0A	ns	—	3.9	—
Turn-on Rise Time	t _r			—	8.8	—
Turn-off Delay Time	t _{D(off)}			—	10	—
Turn-off fall Time	t _f			—	3.7	—

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

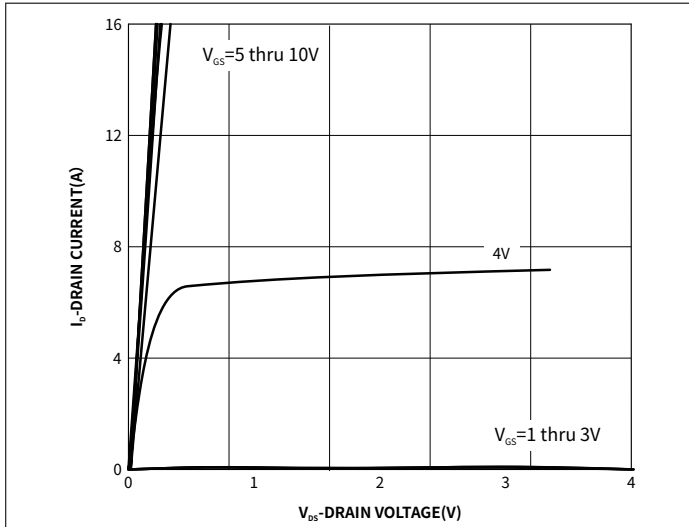


Fig.1 Output Characteristics

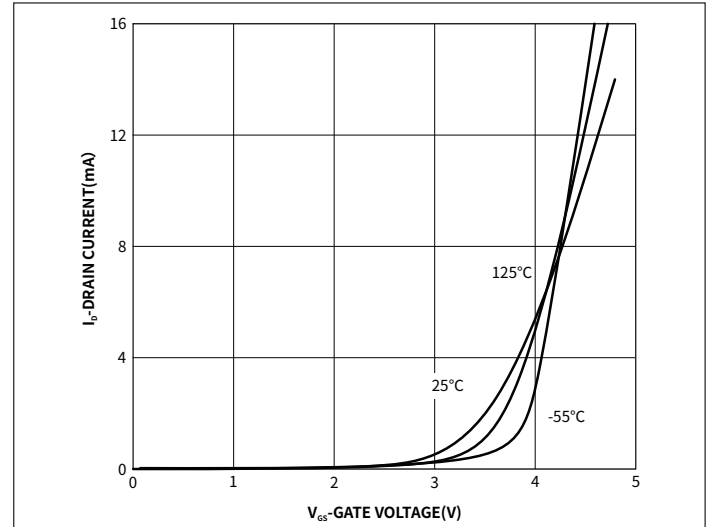


Fig.2 Transfer Characteristics

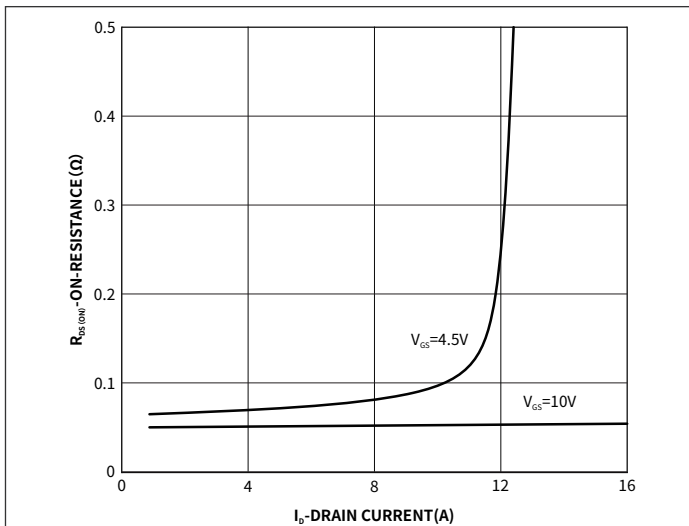


Fig.3 On-Resistance vs. Drain Current and Gate Voltage

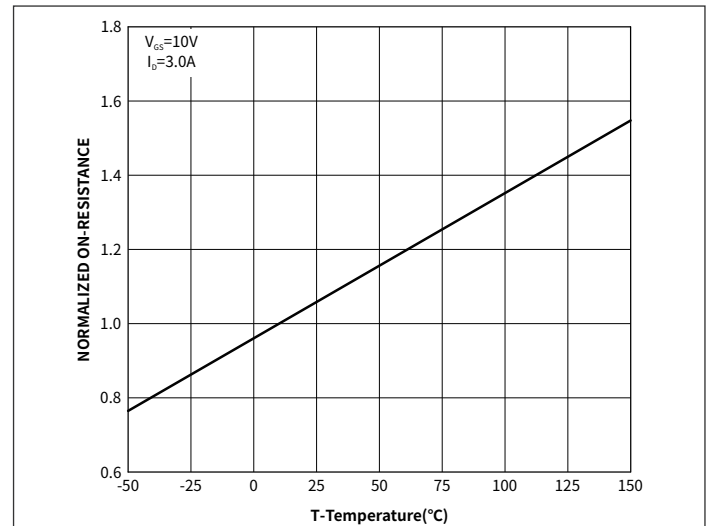


Fig.4 On-Resistance vs. Junction Temperature

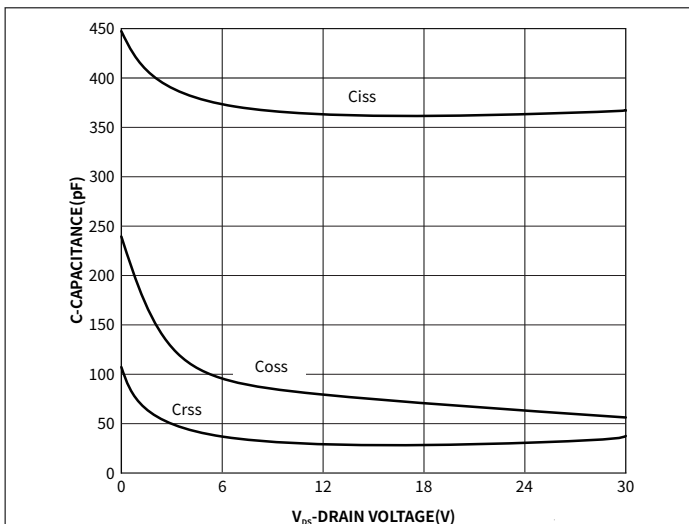


Fig.5 Capacitance Characteristics

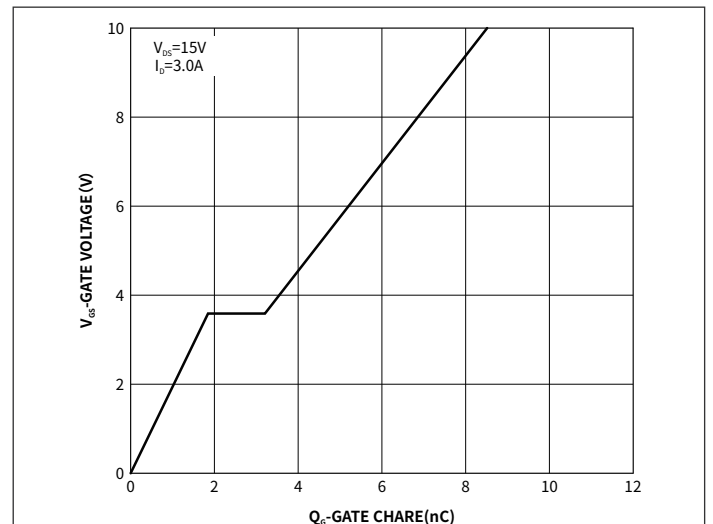
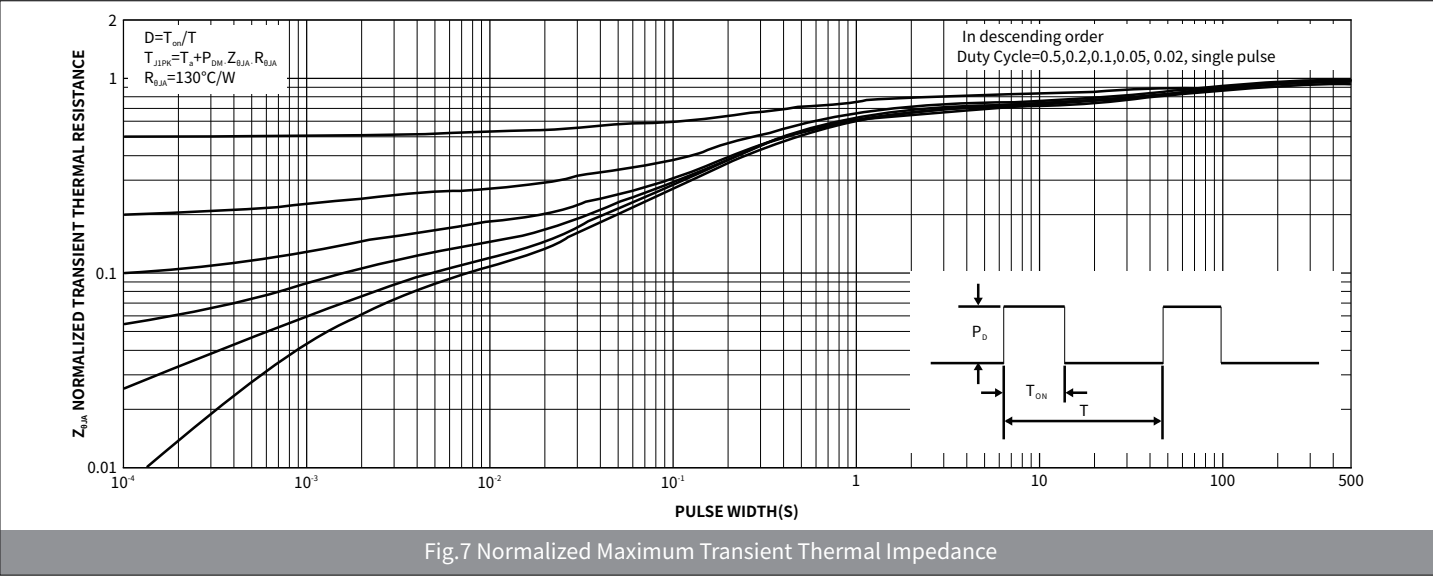
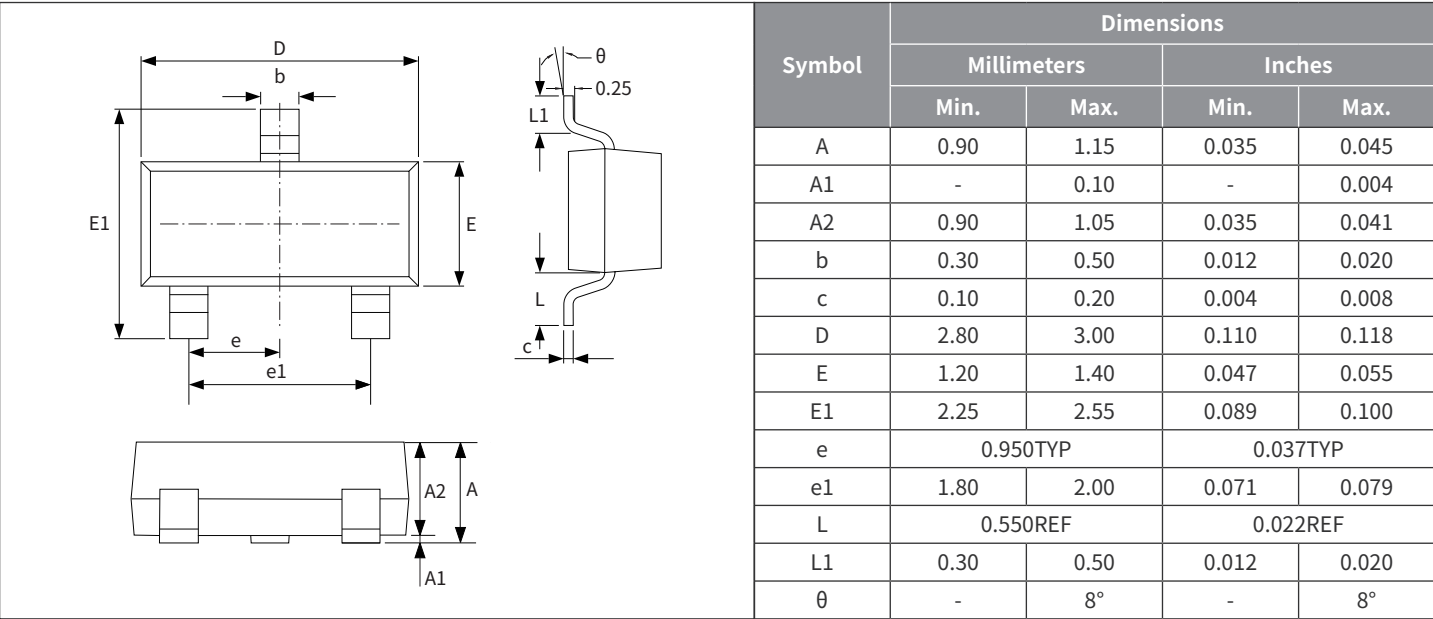


Fig.6 Gate Charge

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

