

## SOT-23 Plastic-Encapsulate MOSFETS

### Features

- $V_{DS} = -30V$
- $I_D = -2.6A$
- $R_{DS(on)}@V_{GS} = -10V < 90m\Omega$
- $R_{DS(on)}@V_{GS} = -4.5V < 150m\Omega$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Fast Switching Speed

### Applications

- Battery operated systems
- Solid-state relays
- 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

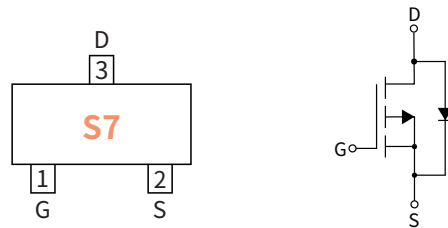
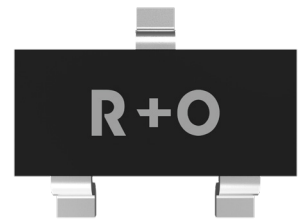
**Drain-source Voltage**

-30 V

**Drain Current**

-2.6 Ampere

SOT-23



### 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	$\pm 20$
Drain Current <sup>(1)(2)</sup>	$I_D$	A	-2.6
T <sub>A</sub> =25°C @ Steady State			
Pulsed Drain Current <sup>(1)(2)</sup>	$I_{DM}$	A	-15
Total Power Dissipation @ T <sub>A</sub> =25°C	$P_D$	W	1.0
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	°C / W	125
Junction and Storage Temperature Range	$T_J, T_{STG}$	°C	-55 ~ +150

Note:

(1) Surface mounted on FR4 board.

(2)  $t \leq 5$  sec.

### 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	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$	$\mu A$	—	—	-1.0
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	$\pm 100$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-1.0	-1.6	-2.2
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-2.6A$	m $\Omega$	—	77	90
		$V_{GS}=-4.5V, I_D=-2.0A$		—	125	150
Forward Transconductance	$g_{fs}$	$V_{DS}=-10V, I_D=-3.0A$	S	—	4.5	—
Diode Forward Voltage	$V_{SD}$	$I_S=-1.0A, V_{GS}=0V$	V	—	—	-1.0
Maximum Body-Diode Continuous Current	$I_S$	—	A	—	—	-1.0

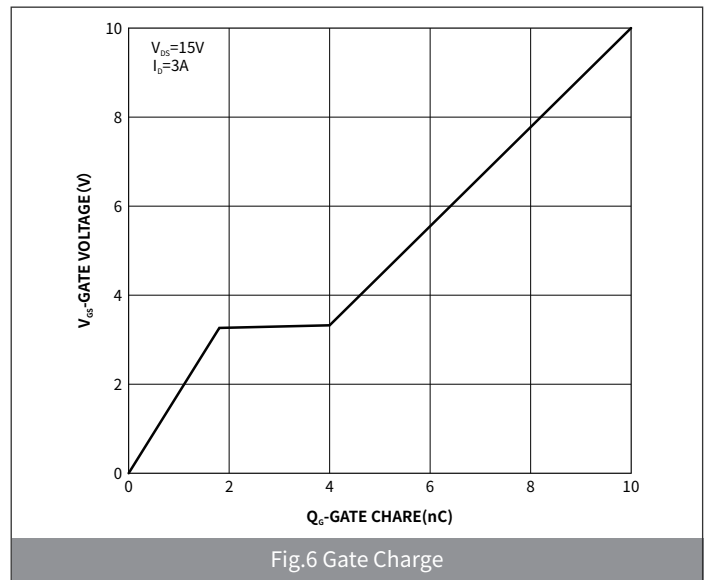
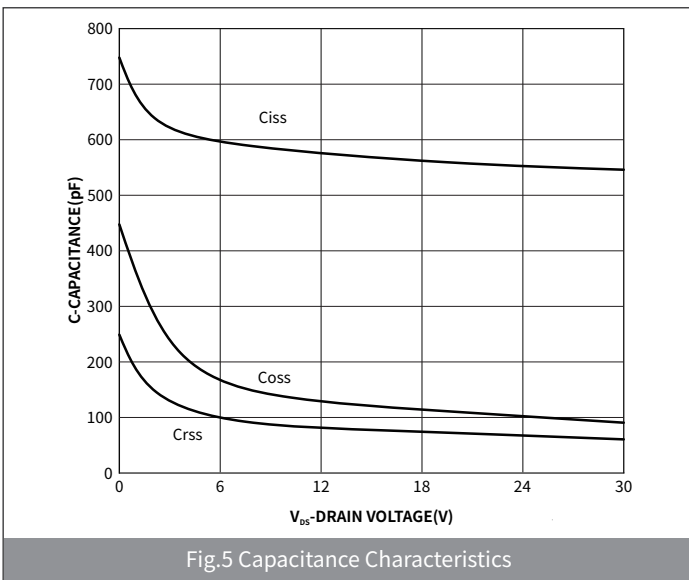
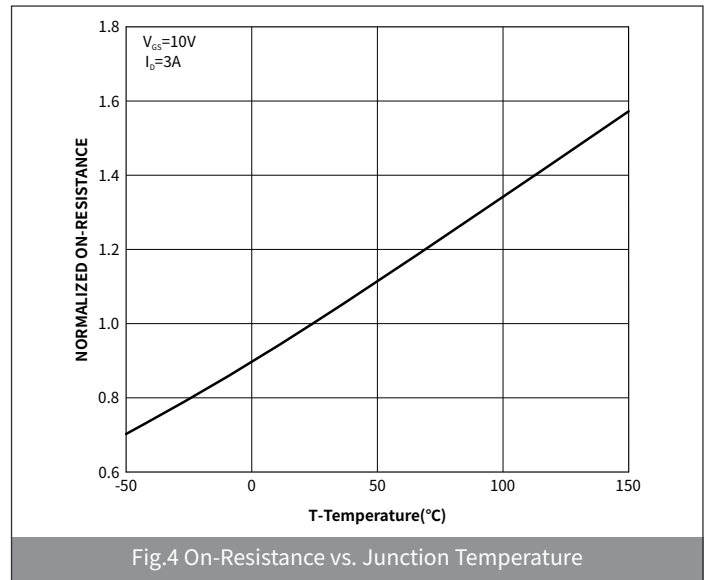
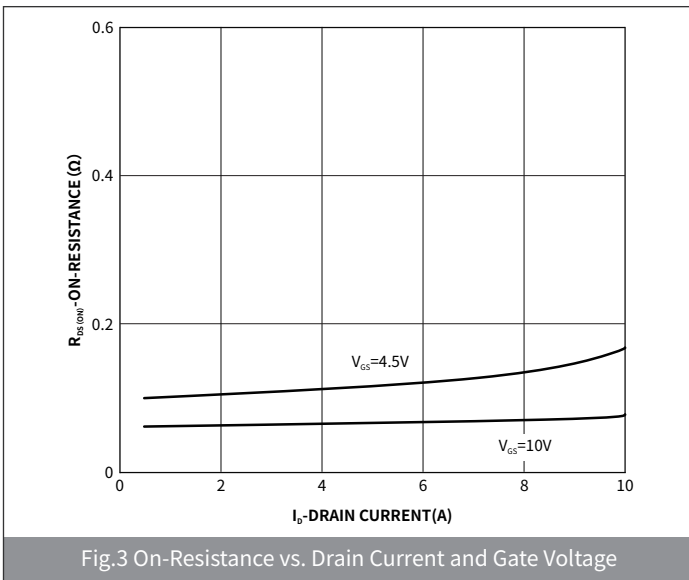
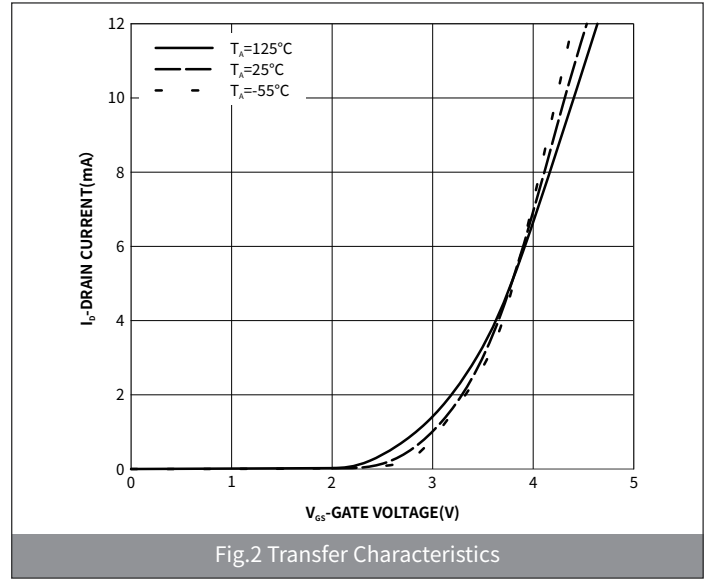
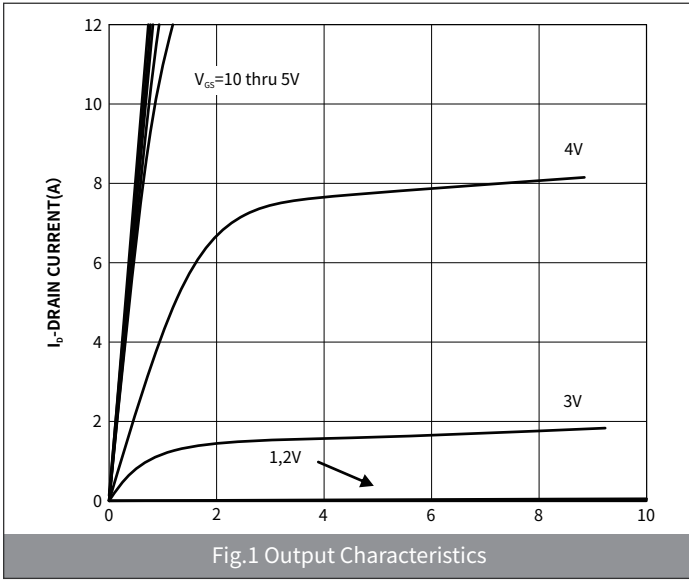
● **Dynamic Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	$C_{iss}$	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$	pF	—	200	—
Output Capacitance	$C_{oss}$			—	45	—
Reverse Transfer Capacitance	$C_{rss}$			—	30	—

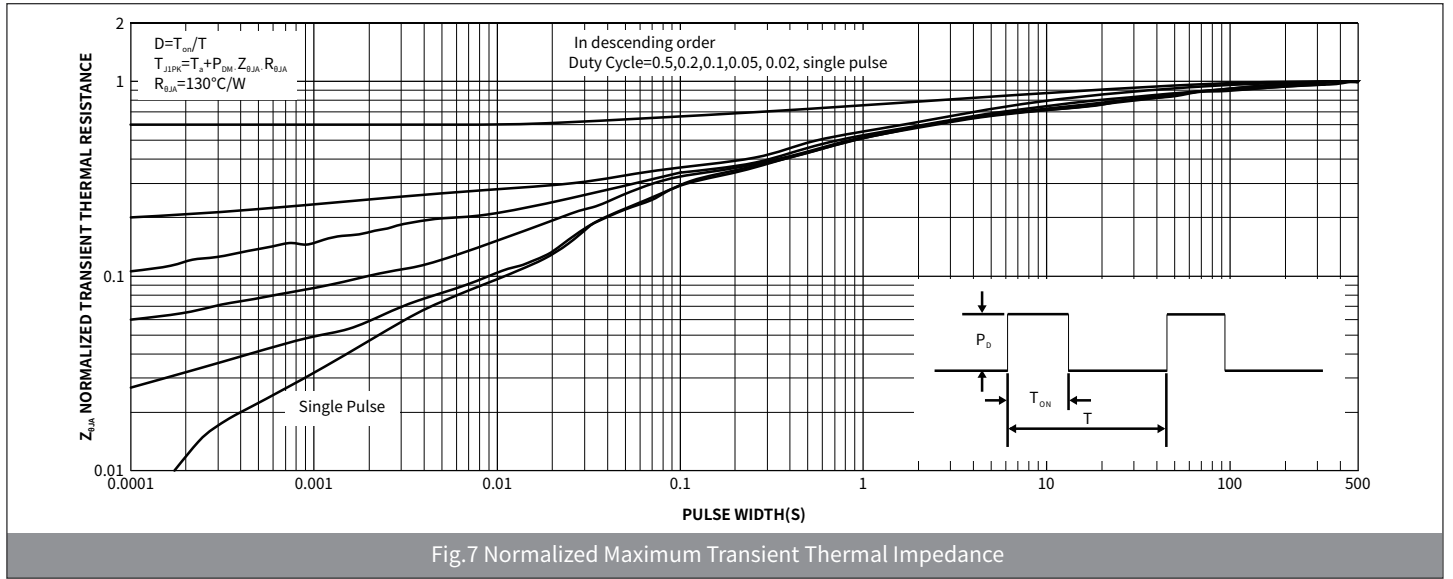
● **Switching Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	$Q_g$	$V_{GS}=-15V$ $V_{DS}=-10V$ $I_D=-2.6A$	nC	—	4.0	—
Gate-Source Charge	$Q_{gs}$			—	1.0	—
Gate-Drain Charge	$Q_{gd}$			—	1.0	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_{GEN}=3.0\Omega$ $I_D=-1.0A$	ns	—	8.0	—
Turn-on Rise Time	$t_r$			—	4.0	—
Turn-off Delay Time	$t_{D(off)}$			—	12	—
Turn-off fall Time	$t_f$			—	4.0	—

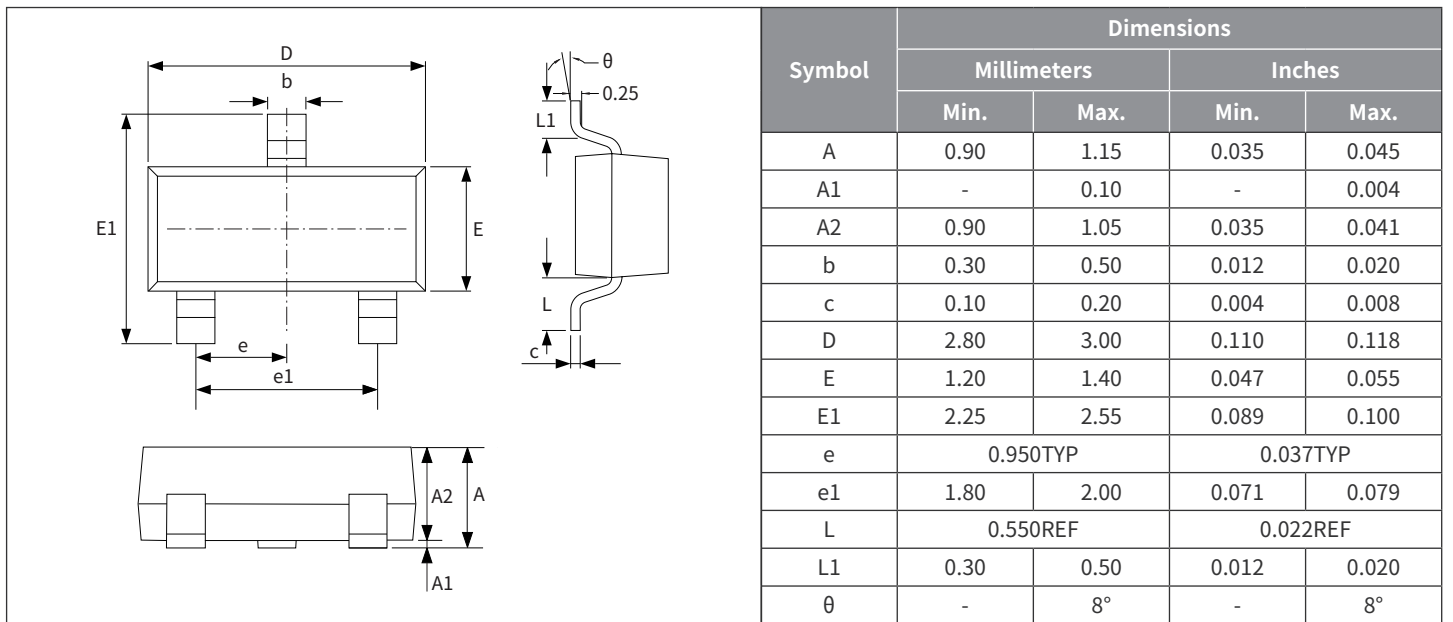
● Ratings And Characteristics Curves ( $T_a=25^\circ\text{C}$  Unless otherwise specified)



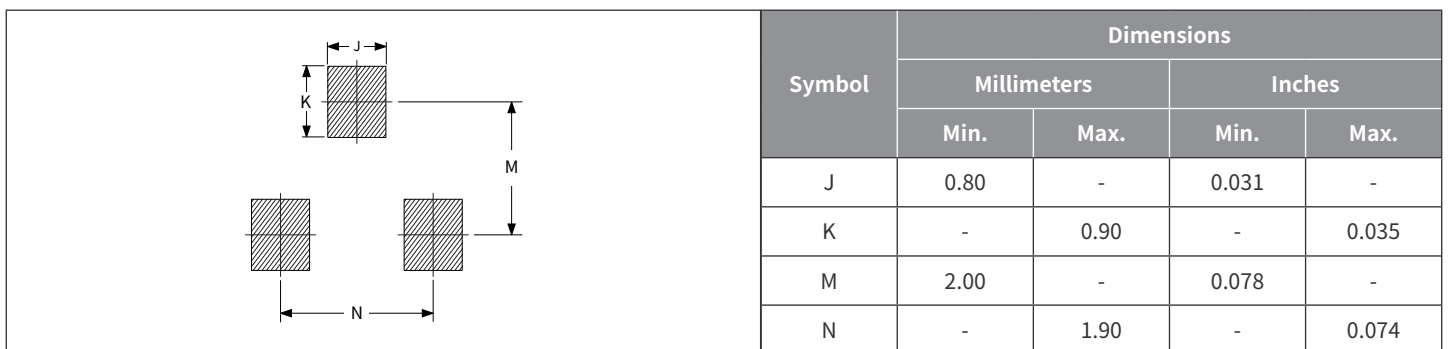
## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



## ● Package Outline Dimensions (SOT-23)



## ● Suggested Pad Layout



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