

SOT-23 Plastic-Encapsulate MOSFETS

● Features

- $V_{DS}=100V$
- $I_D=0.17A$
- $R_{DS(on)}@V_{GS}=10V < 6\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 10\Omega$
- Trench Power LV MOSFET technology
- Load Switch for Portable Devices.
- DC/DC Converter

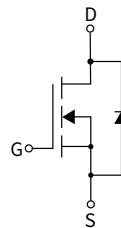
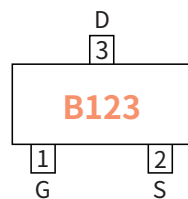
● Applications

- Battery protection
- Load switch
- Power management

● Mechanical Data

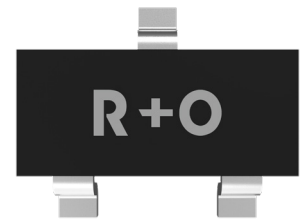
- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

● Function Diagram



Drain-source Voltage
100 V
Drain Current
0.17 Ampere

SOT-23



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

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	100
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	A	0.17
Total Power Dissipation	P_D	W	0.68
Junction temperature	T_J	°C	-55 ~ +150
Storage temperature	T_{stg}	°C	-55 ~ +150
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	°C / W	417

● 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	100	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	μA	—	—	0.1
		$V_{DS}=20V, V_{GS}=0V$		—	—	0.01
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 50
Gate Threshold Voltage ⁽¹⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.8	1.4	2.8
Static Drain-Source On-Resistance ⁽¹⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.17A$	Ω	—	—	6.0
		$V_{GS}=4.5V, I_D=0.17A$		—	—	10
Forward Transconductance ⁽¹⁾	g_{FS}	$V_{DS}=10V, I_D=0.17A$	mS	80	—	—
Diode Forward Voltage	V_{SD}	$I_S=0.34A, V_{GS}=0V$	V	—	—	1.3
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	0.34

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	pF	—	22	60
Output Capacitance	C_{oss}			—	3.5	15
Reverse Transfer Capacitance	C_{rss}			—	2.0	6.0

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=0.28A$	nC	—	1.4	2.0
Gate-Source Charge	Q_{gs}			—	0.15	0.25
Gate-Drain Charge	Q_{gd}			—	0.2	0.4
Turn-on Delay Time ⁽¹⁾⁽²⁾	$t_{D(on)}$	$V_{DD}=30V, V_{GS}=10V,$ $I_D=0.28A, R_{GEN}=50\Omega$	ns	—	—	8.0
Turn-on Rise Time ⁽¹⁾⁽²⁾	t_r			—	—	8.0
Turn-off Delay Time ⁽¹⁾⁽²⁾	$t_{D(off)}$			—	—	13
Turn-off fall Time ⁽¹⁾⁽²⁾	t_f			—	—	16

Note :

(1)Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

(2)These parameters have no way to verify.

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

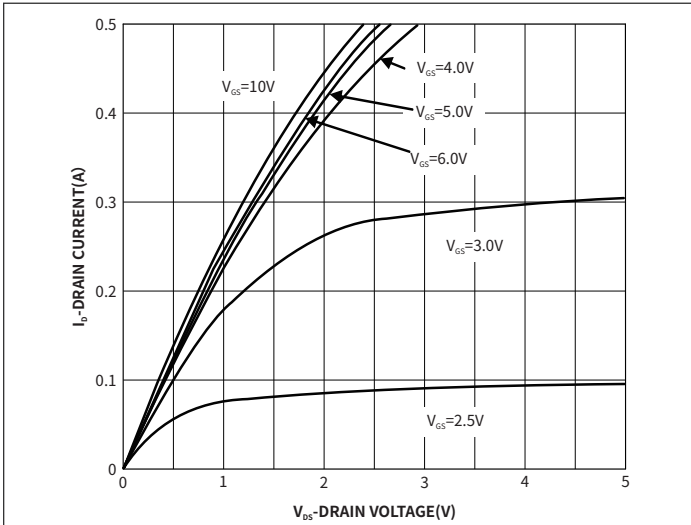


Fig.1 Output Characteristics

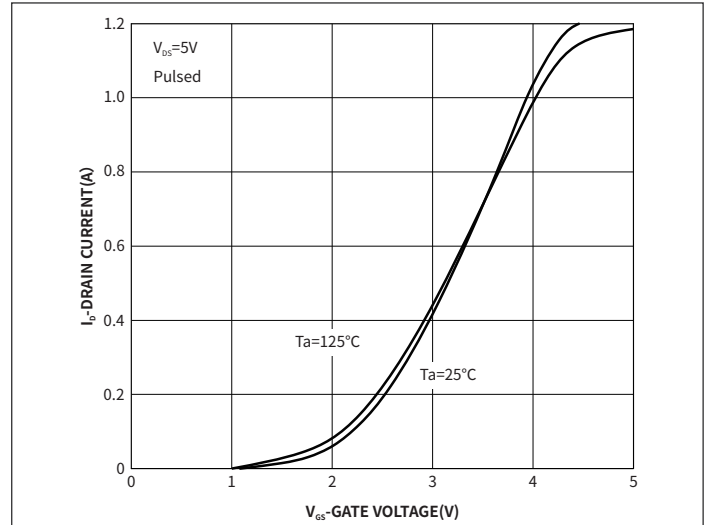


Fig.2 Transfer Characteristics

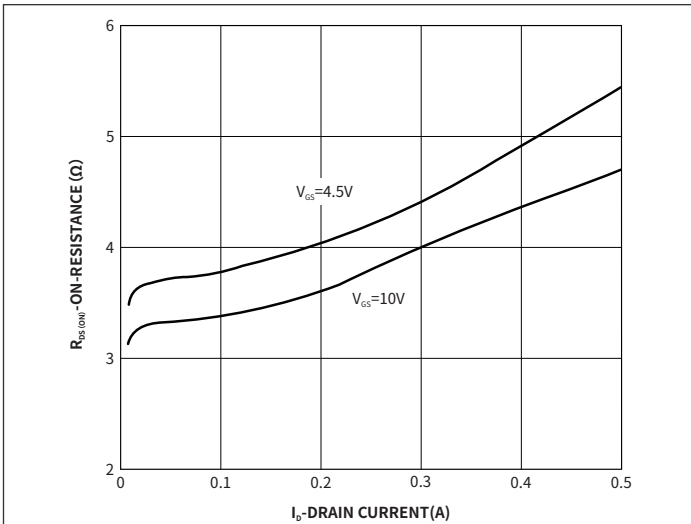


Fig.3 On-Resistance vs. Drain Current and Gate Voltage

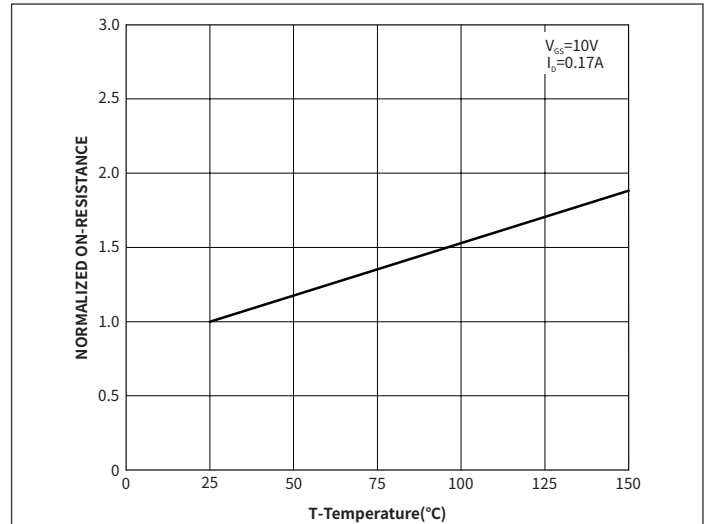


Fig.4 On-Resistance vs. Junction Temperature

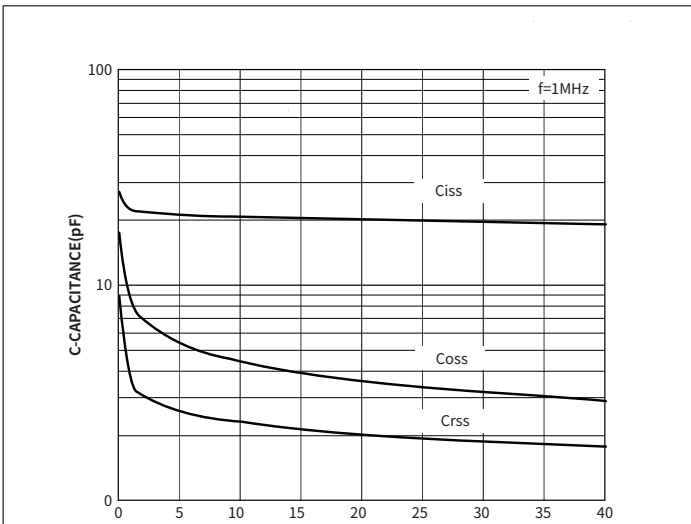


Fig.5 Capacitance Characteristics

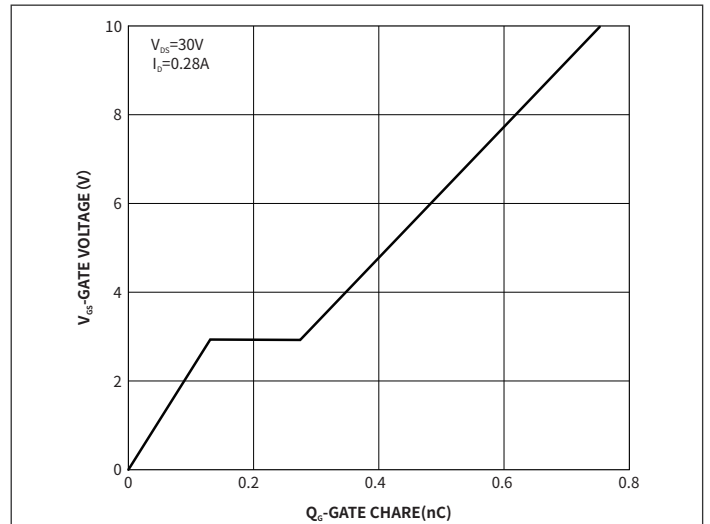
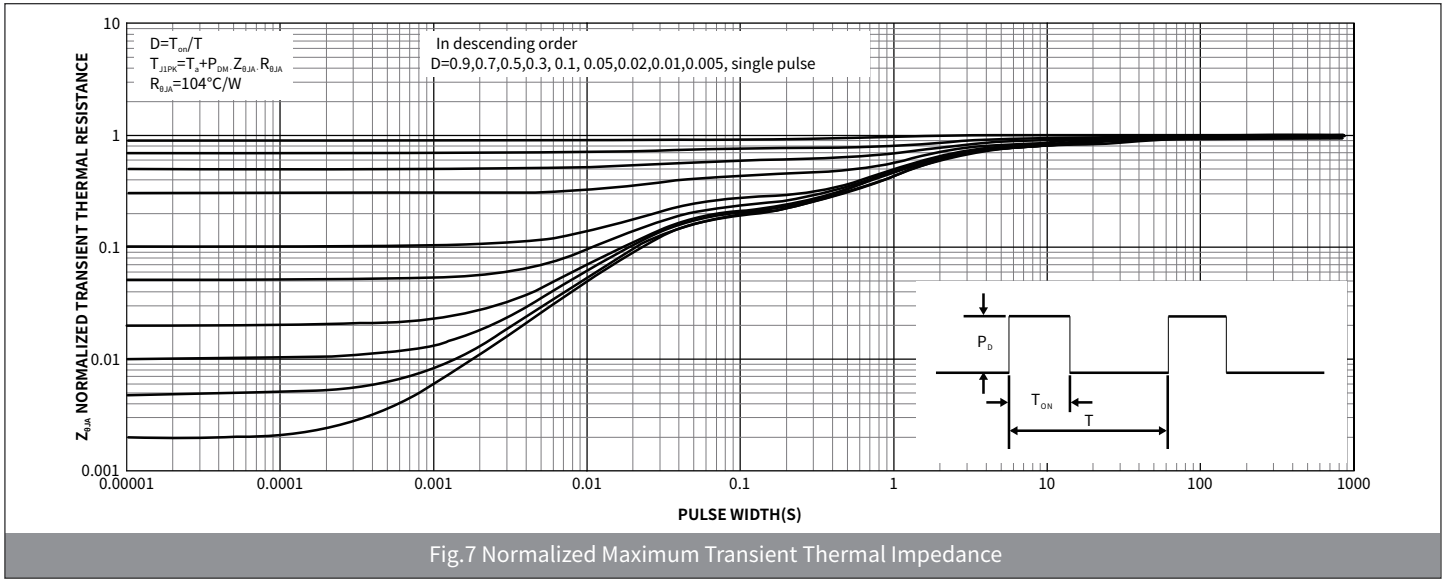
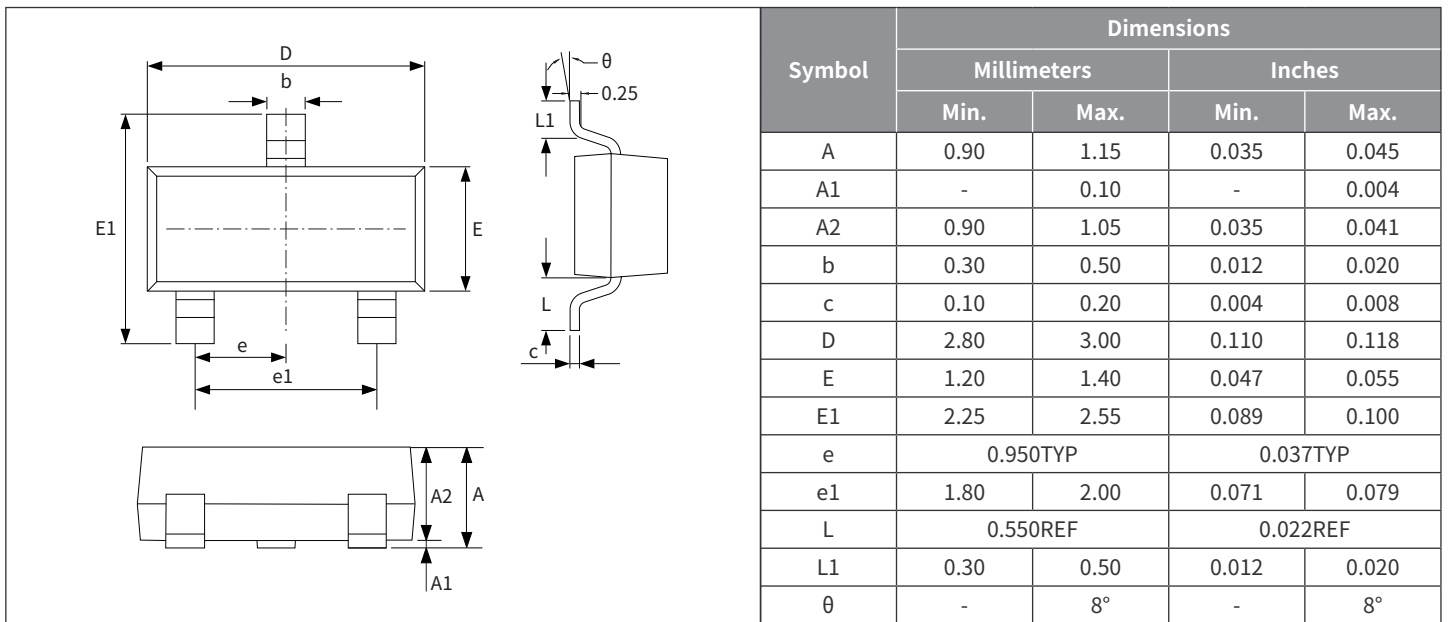


Fig.6 Gate Charge

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



● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

