

## 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

**Drain-source Voltage**

100 V

**Drain Current**

0.17 Ampere

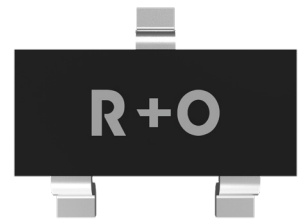
### Applications

- Battery protection
- Load switch
- Power management

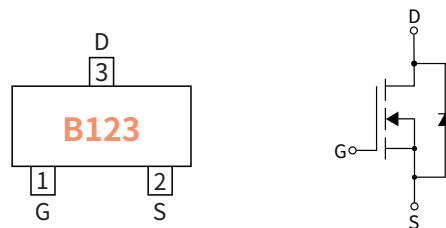
### Mechanical Data

- 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

SOT-23



### Function Diagram



### 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	$\pm 20$
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	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$	$\mu A$	—	—	0.1
		$V_{DS}=20V, V_{GS}=0V$		—	—	0.01
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	$\pm 50$
Gate Threshold Voltage <sup>(1)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.8	1.4	2.0
Static Drain-Source On-Resistance <sup>(1)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.17A$	$\Omega$	—	—	6.0
		$V_{GS}=4.5V, I_D=0.17A$		—	—	10
Gate resistance	$R_g$	$V_{DS}=0V, V_{GS}=0, f=1MHz$	$\Omega$	—	—	3.6
Forward Transconductance <sup>(1)</sup>	$g_{FS}$	$V_{DS}=10V, I_D=0.17A$	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 <sup>(1)(2)</sup>	$t_{D(on)}$	$V_{DD}=30V, V_{GS}=10V,$ $I_D=0.28A, R_{GEN}=50\Omega$		—	—	8.0
Turn-on Rise Time <sup>(1)(2)</sup>	$t_r$			—	—	8.0
Turn-off Delay Time <sup>(1)(2)</sup>	$t_{D(off)}$			—	—	13
Turn-off fall Time <sup>(1)(2)</sup>	$t_f$			—	—	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)

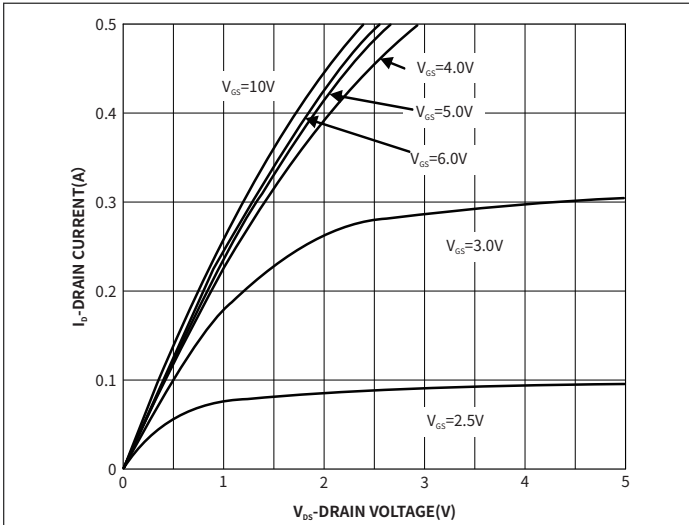


Fig.1 Output Characteristics

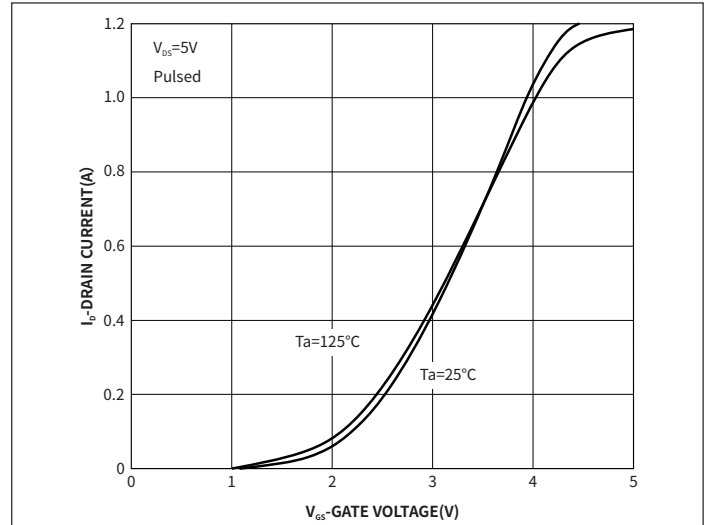


Fig.2 Transfer Characteristics

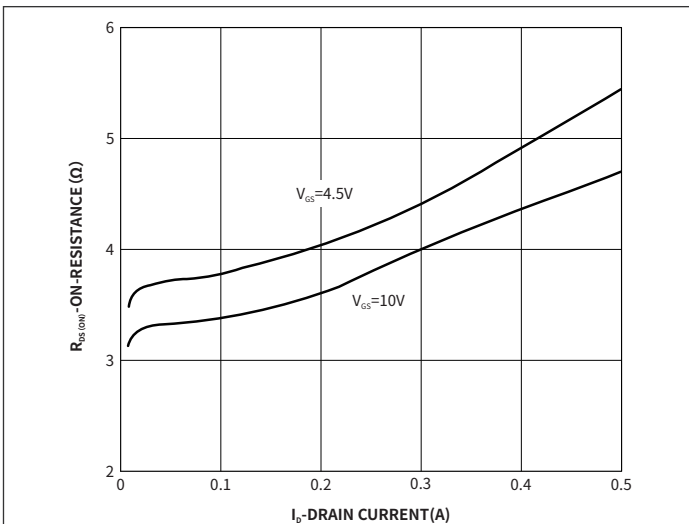


Fig.3 On-Resistance vs. Drain Current and Gate Voltage

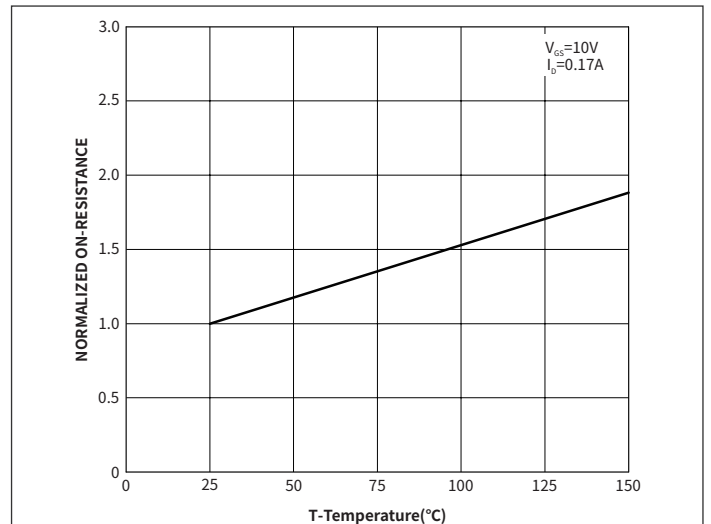


Fig.4 On-Resistance vs. Junction Temperature

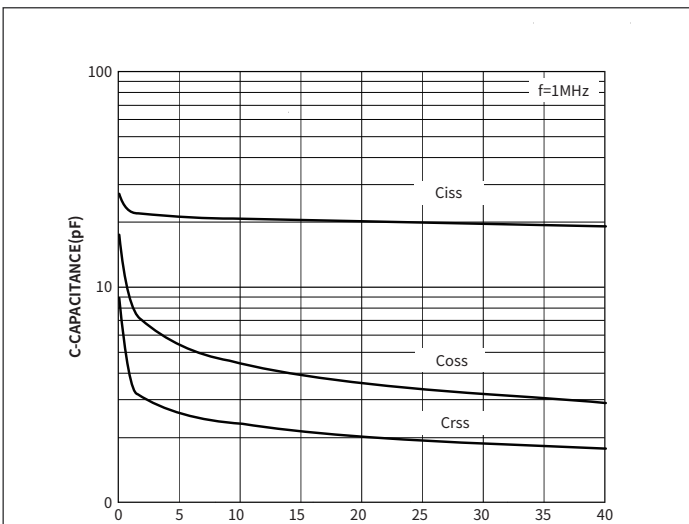


Fig.5 Capacitance Characteristics

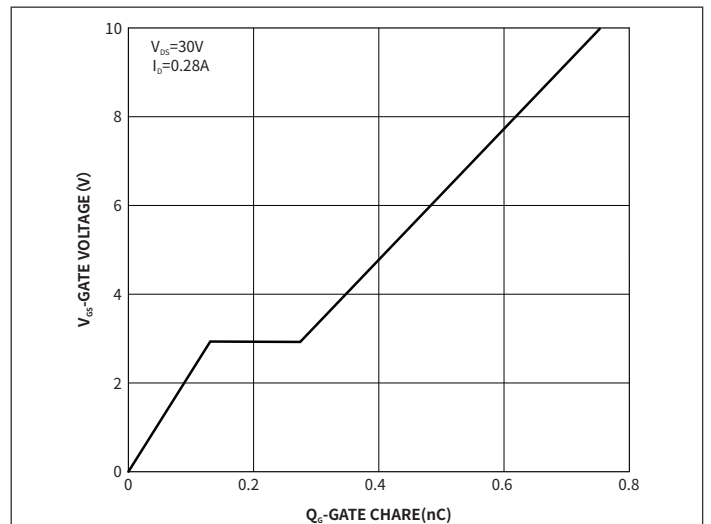
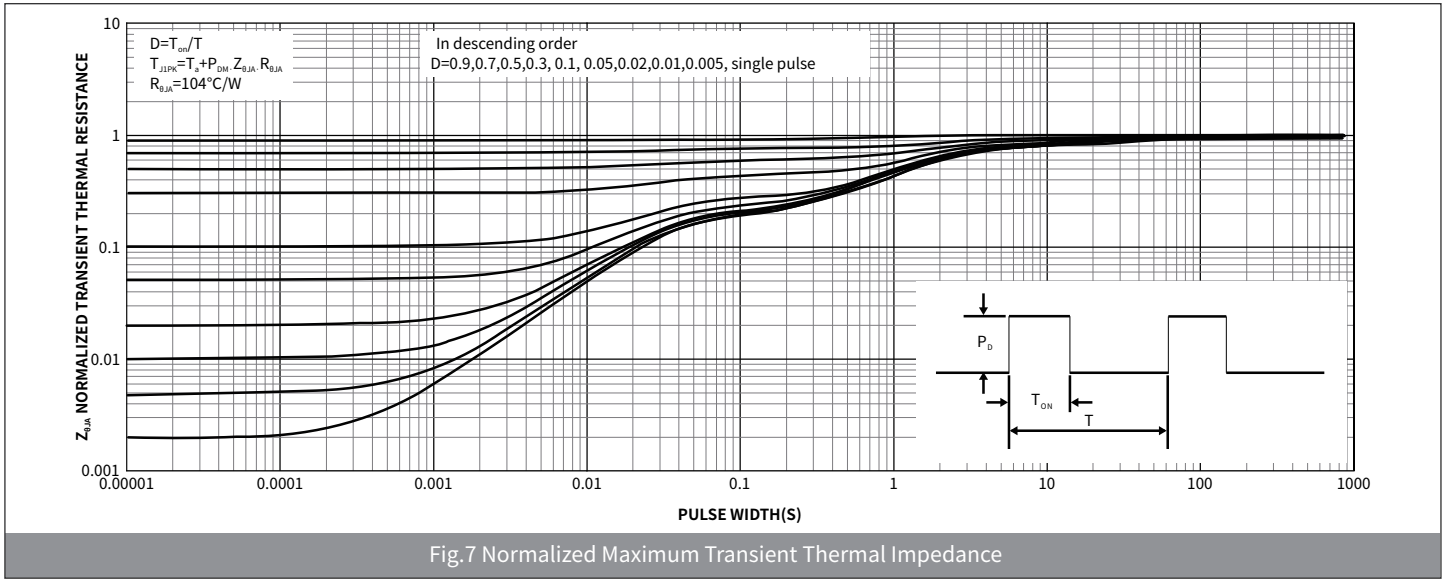
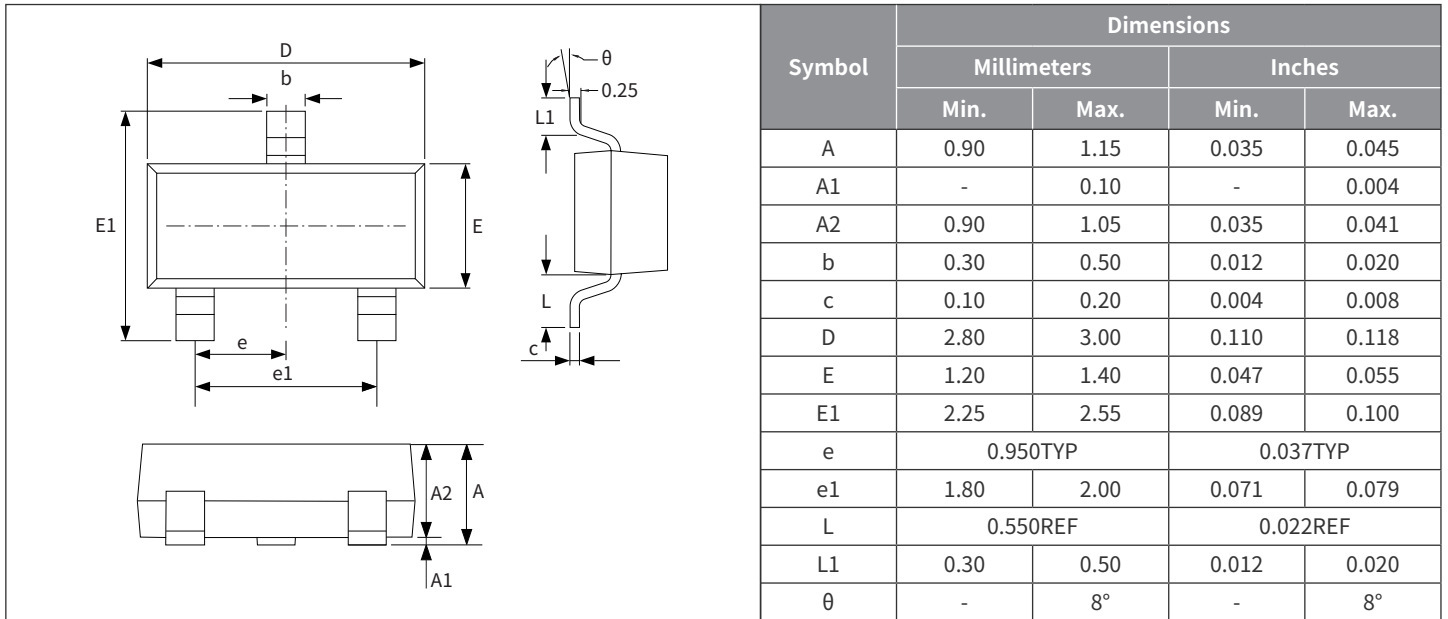


Fig.6 Gate Charge

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



## ● Package Outline Dimensions (SOT-23)



## ● Suggested Pad Layout

