

## SOT-323 Plastic-Encapsulate MOSFETS

### Features

- $V_{DS}=50V$
- $I_D=0.22A$
- $R_{DS(on)}@V_{GS}=10V < 3.5\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 6.0\Omega$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Fast Switching Speed

**Drain-source Voltage**  
50 V  
**Drain Current**  
0.22 Ampere

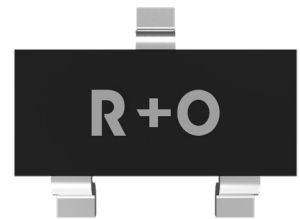
### Applications

- Battery operated systems
- Solid-state relays
- Direct logic-level interface: TTL/CMOS

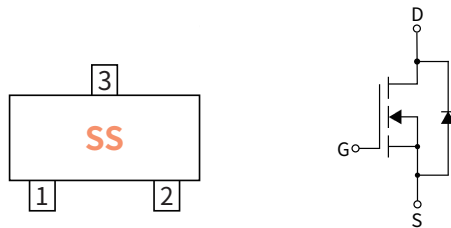
### Mechanical Data

- Case: SOT-323  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

SOT-323



### Reference News



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

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	$V_{DS}$	V	50
Gate-source Voltage	$V_{GS}$	V	$\pm 20$
Drain Current	$I_D$	A	0.22
Total Power Dissipation @ $T_A=25^\circ C$	$P_D$	W	0.3
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^\circ C / W$	417
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-323	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	50	—	—
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=50V, V_{GS}=0V$	$\mu A$	—	—	0.5
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	0.7	—	1.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.22A$	$\Omega$	—	—	3.5
		$V_{GS}=4.5V, I_D=0.22A$		—	—	6.0
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=0.22A$	S	0.12	—	—
Diode Forward Voltage	$V_{SD}$	$I_S=0.44A, V_{GS}=10V$	V	—	—	1.4

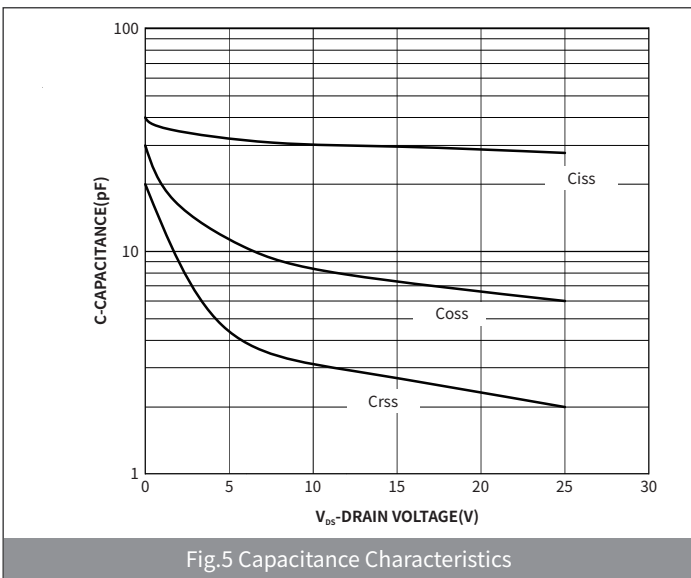
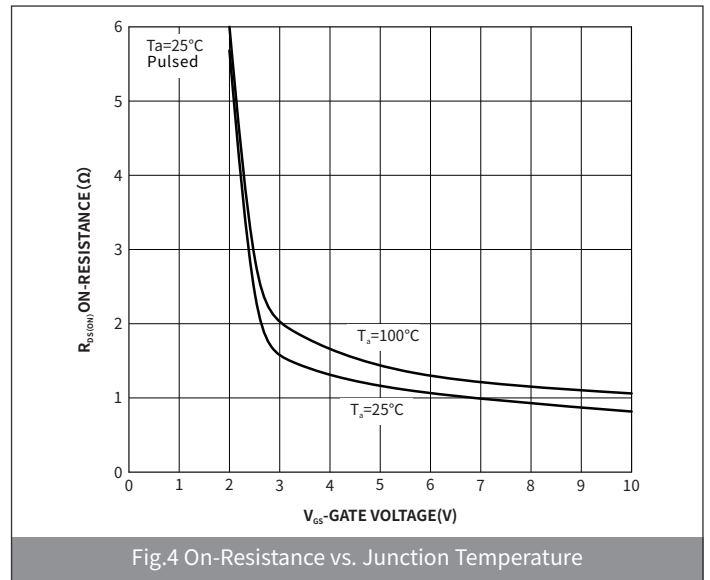
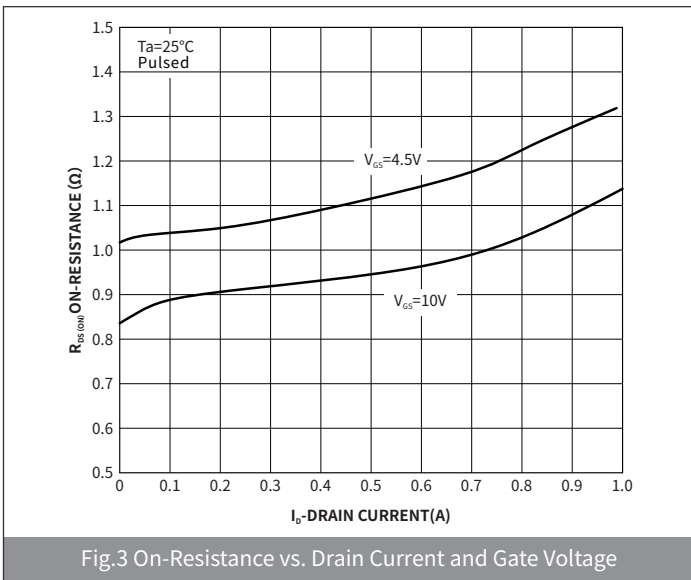
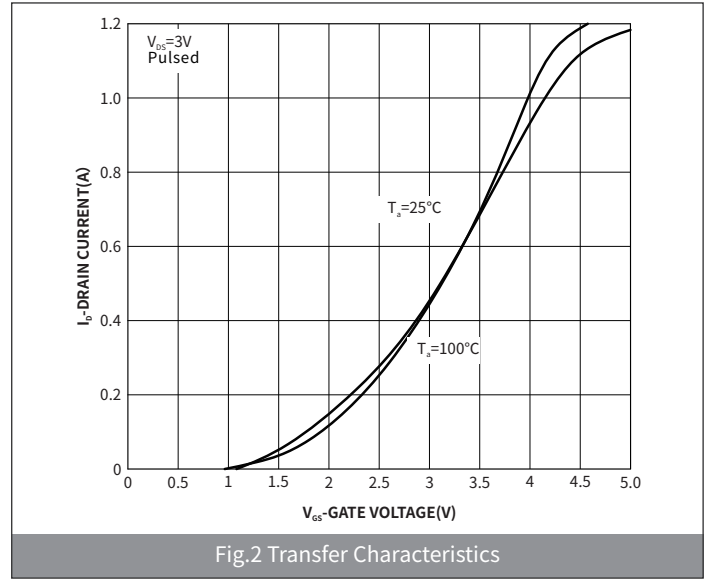
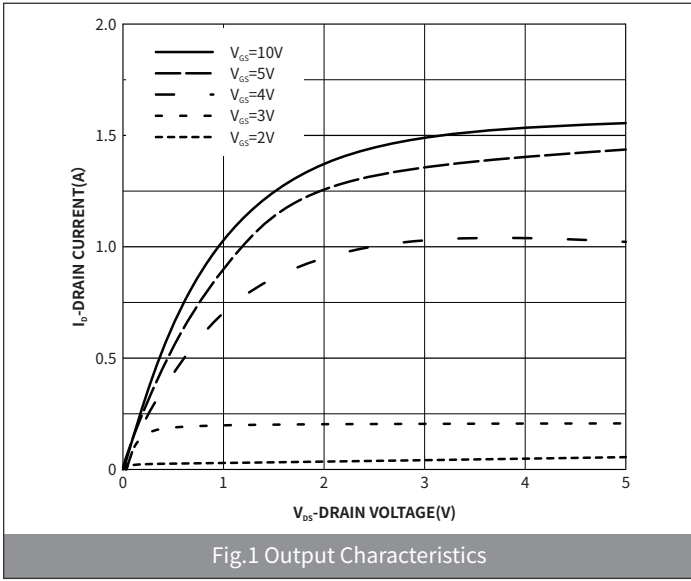
● **Dynamic Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	pF	—	27	—
Output Capacitance	$C_{oss}$			—	13	—
Reverse Transfer Capacitance	$C_{rss}$			—	6.0	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Turn-on Delay Time	$t_{D(on)}$	$V_{DD}=30V$ $I_D=0.29A$ $R_G=6.0\Omega$ $V_{GS}=10V$	ns	—	—	5.0
Turn-on Rise Time	$t_r$			—	—	18
Turn-off Delay Time	$t_{D(off)}$			—	—	36
Turn-off fall Time	$t_f$			—	—	14

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



## ● Package Outline Dimensions (SOT-323)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	-	0.10	-	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.40	0.012	0.020
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.45	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.20	1.40	0.047	0.055
L	0.525REF		0.021REF	
L1	0.26	0.46	0.010	0.018
$\theta$	-	8°	-	8°

## ● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.70	-	0.027	-
K	-	0.90	-	0.035
M	1.90	-	0.074	-
N	-	1.30	-	0.051

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