

100V N-Channel MOSFET

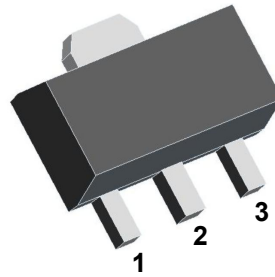
FEATURES

- $R_{DS(ON)} \leq 240m\Omega$ (210m Ω Typ.)
@ $V_{GS}=10V$
- $R_{DS(ON)} \leq 280m\Omega$ (230m Ω Typ.)
@ $V_{GS}=4.5V$

APPLICATIONS

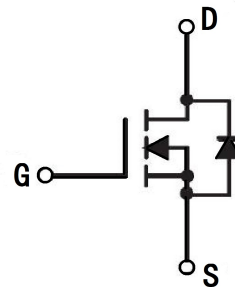
- Driver for Relay, Solenoid, Motor, LED etc.
- DC-DC converter circuit
- Power Switch
- Load Switch
- Charging

SOT-89

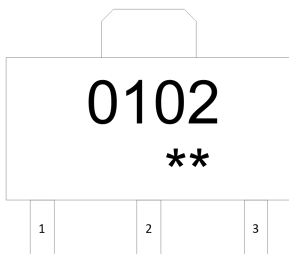


1: G
2: D
3: S

N-CHANNEL MOSFET



MARKING



0102 =Device Code
** =Week Code

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	2	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

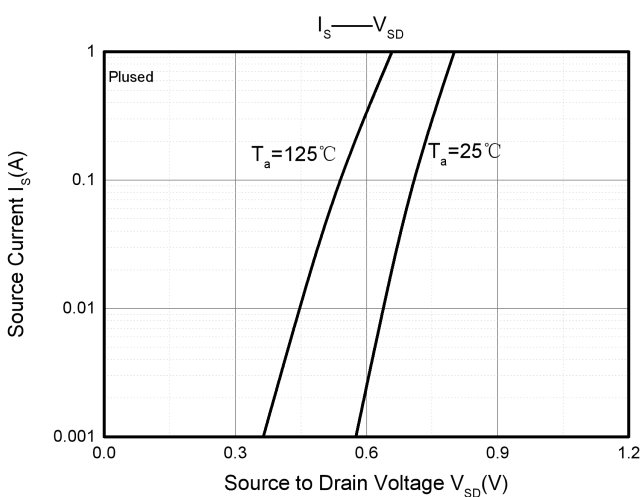
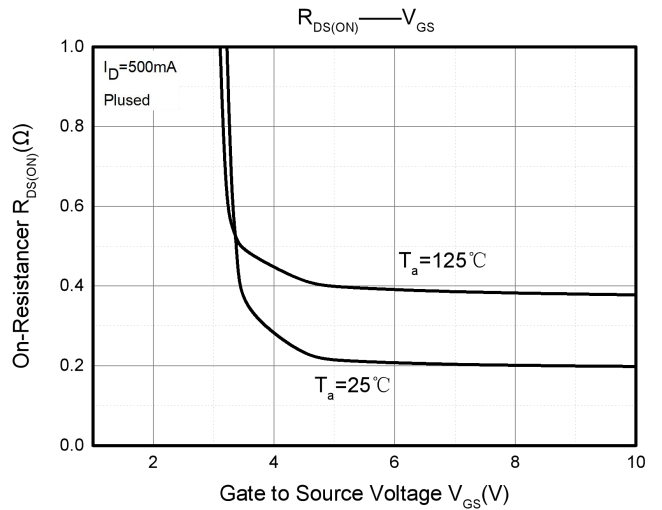
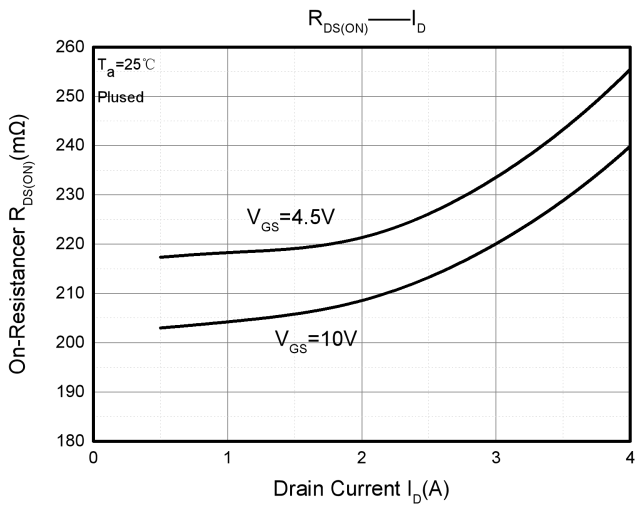
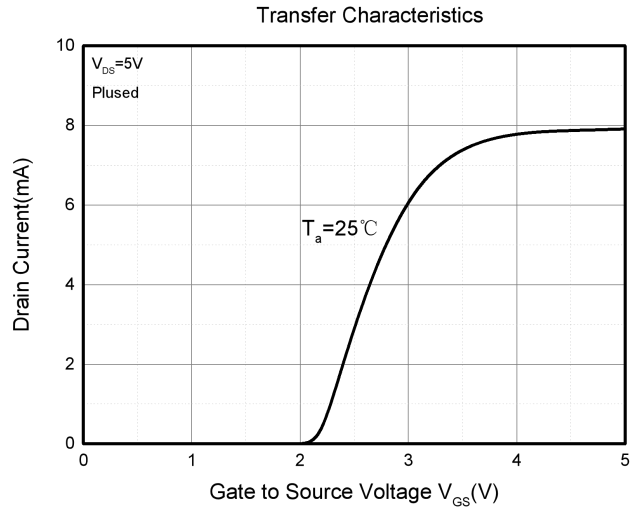
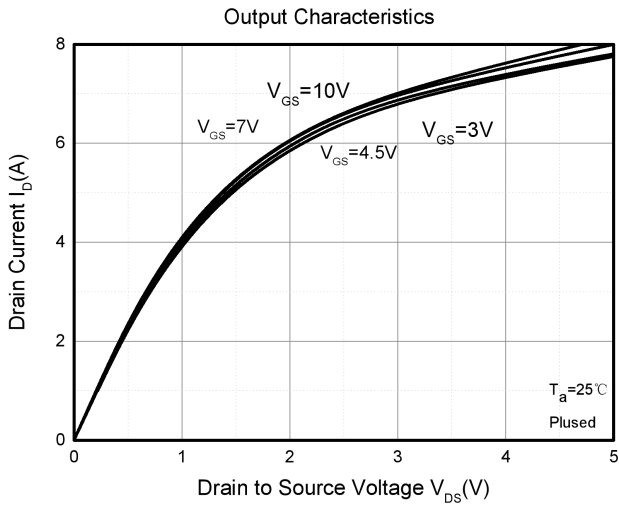
ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage ³	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	2.1	3	V
Drain-source on-resistance ³	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1.4A$		210	240	m Ω
		$V_{GS} = 4.5V, I_D = 1.3A$		230	280	
Dynamic characteristics⁴						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V,$ $f = 1MHz$		190		pF
Output Capacitance	C_{oss}			22		
Reverse Transfer Capacitance	C_{rss}			13		
Switching Characteristics⁴						
Total Gate Charge	Q_g	$V_{DS} = 50V, I_D = 1.3A,$ $V_{GS} = 10V$		5.2		nC
Gate-Source Charge	Q_{gs}			0.75		
Gate-Drain Charge	Q_{gd}			1.4		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50V, I_D = 1.3A,$ $R_L = 39\Omega$ $V_{GS} = 10V, R_G = 1\Omega$		6		ns
Turn-on rise time	t_r			10		
Turn-off delay time	$t_{d(off)}$			10		
Turn-off fall time	t_f			6		
Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 1A, T_J = 25^\circ C$		0.8	1.2	V

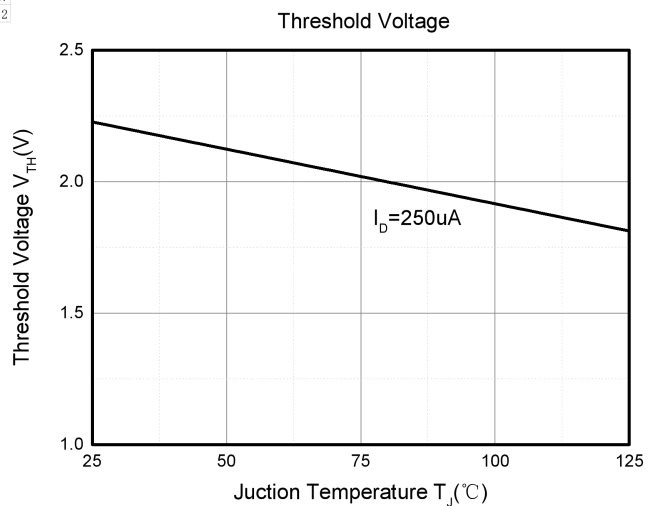
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production

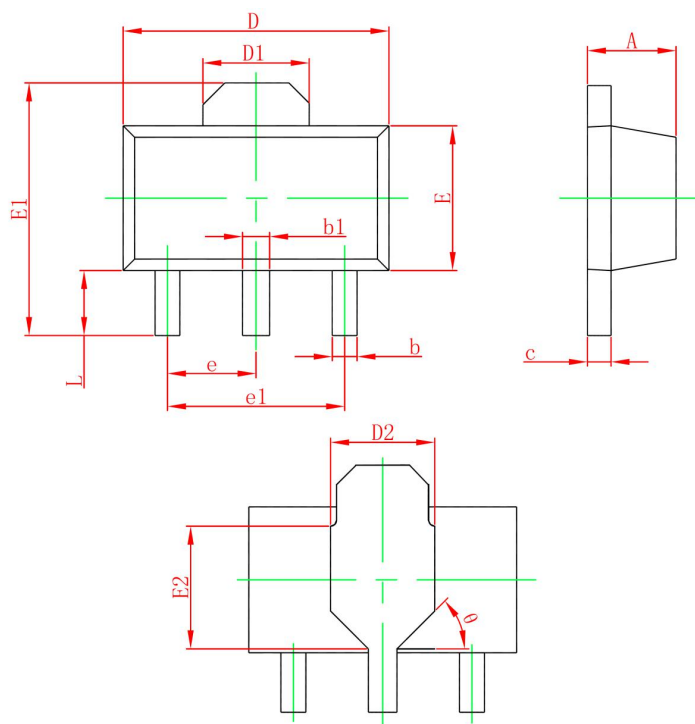
TYPICAL PERFORMANCE CHARACTERISTICS



2.227
1.812



SOT-89-3L PACKAGE OUTLINE DRAWING



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
D2	1.750 REF.		0.069 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
E2	1.900 REF.		0.074 REF.	
e	1.500 TYP.		0.059 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047
θ	45°		45°	