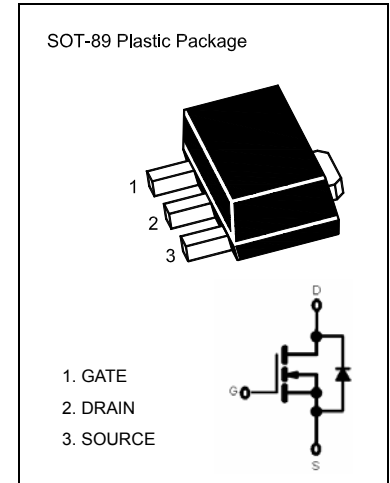


SOT-89 Plastic-Encapsulate MOSFETS

P-Channel 8-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-12V	45mΩ@-4.5V	-4.1A
	60mΩ@-2.5V	
	90mΩ@-1.8V	



FEATURE

TrenchFET Power MOSFET

APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING: 2305

Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	±8	
Continuous Drain Current	I_D	-4.1	A
Continuous Source-Drain Diode Current	I_S	-0.8	
Maximum Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient($t \leq 10s$)	$R_{\theta JA}$	312.5	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-50 ~ +150	

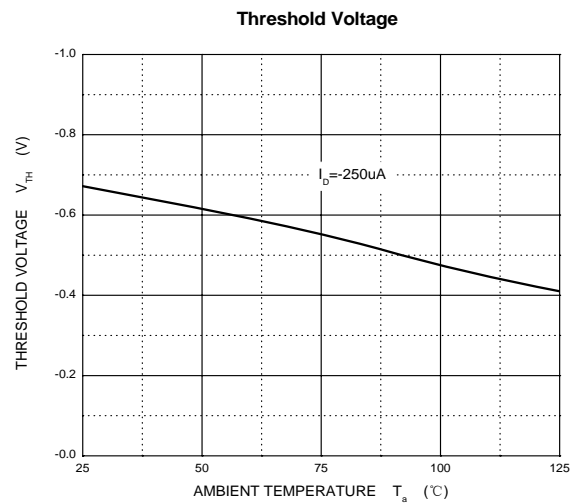
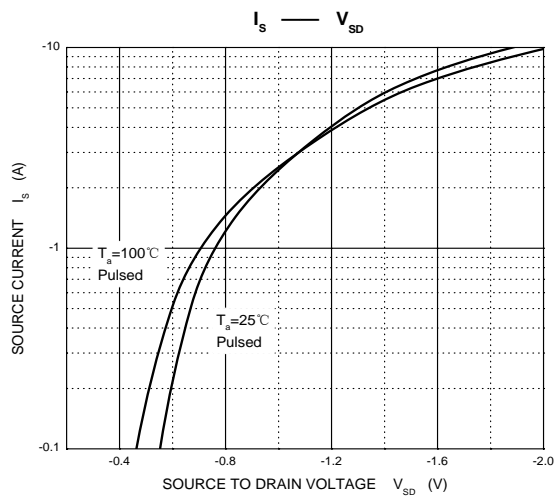
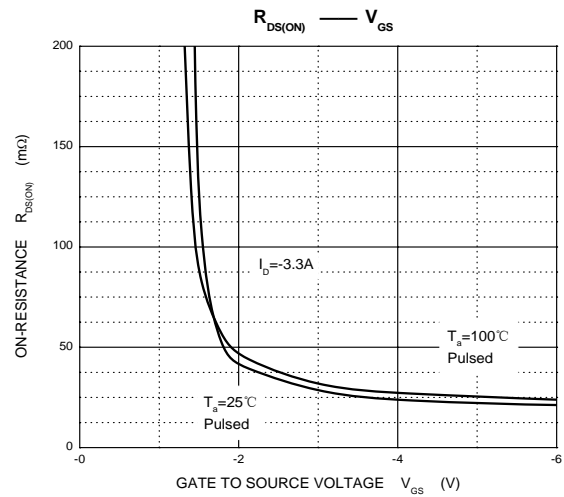
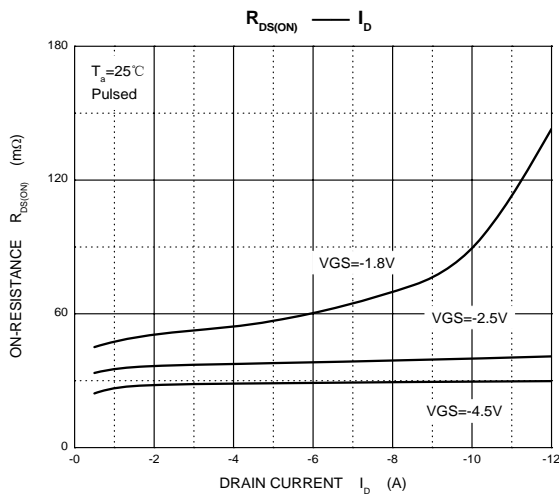
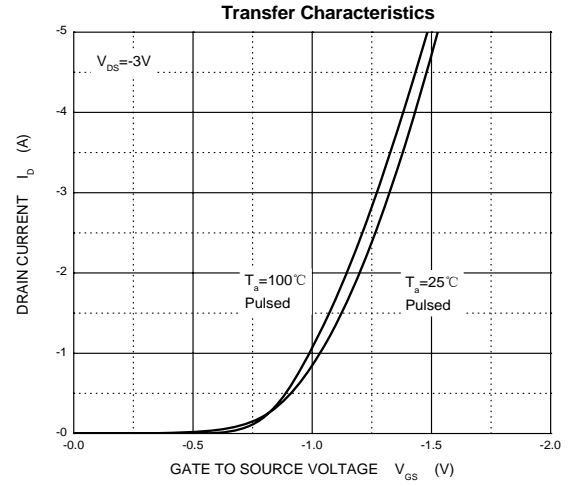
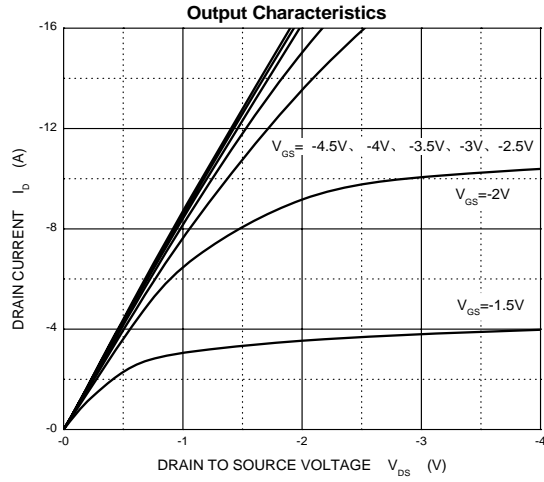
MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5		-0.9	
Gate-source leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -8V, V_{GS} = 0V$			-1	μA
Drain-source on-state resistance ^a	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3.5A$		30	45	m Ω
		$V_{GS} = -2.5V, I_D = -3A$		40	60	
		$V_{GS} = -1.8V, I_D = -2.0A$		60	90	
Forward transconductance ^a	g_{fs}	$V_{DS} = -5V, I_D = -4.1A$	6			S
Dynamic						
Input capacitance ^{b,c}	C_{iss}	$V_{DS} = -4V, V_{GS} = 0V, f = 1MHz$		740		pF
Output capacitance ^{b,c}	C_{oss}			290		
Reverse transfer capacitance ^{b,c}	C_{rss}			190		
Total gate charge ^b	Q_g	$V_{DS} = -4V, V_{GS} = -4.5V,$ $I_D = -4.1A$		7.8	15	nC
		$V_{DS} = -4V, V_{GS} = -2.5V,$ $I_D = -4.1A$		4.5	9	
Gate-source charge ^b	Q_{gs}			1.2		
Gate-drain charge ^b	Q_{gd}			1.6		
Gate resistance ^{b,c}	R_g	$f = 1MHz$	1.4	7	14	Ω
Turn-on delay time ^{b,c}	$t_{d(on)}$	$V_{DD} = -4V,$ $R_L = 1.2\Omega, I_D \approx -3.3A,$ $V_{GEN} = -4.5V, R_g = 1\Omega$		13	20	ns
Rise time ^{b,c}	t_r			35	53	
Turn-off Delay time ^{b,c}	$t_{d(off)}$			32	48	
Fall time ^{b,c}	t_f			10	20	
Turn-on delay time ^{b,c}	$t_{d(on)}$	$V_{DD} = -4V,$ $R_L = 1.2\Omega, I_D \approx -3.3A,$ $V_{GEN} = -8V, R_g = 1\Omega$		5	10	
Rise time ^{b,c}	t_r			11	17	
Turn-off delay time ^{b,c}	$t_{d(off)}$			22	33	
Fall time ^{b,c}	t_f			16	24	
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S	$T_C = 25^\circ C$			-1.4	A
Pulse diode forward current ^a	I_{SM}				-10	
Body diode voltage	V_{SD}	$I_F = -3.3A$			-1.2	V

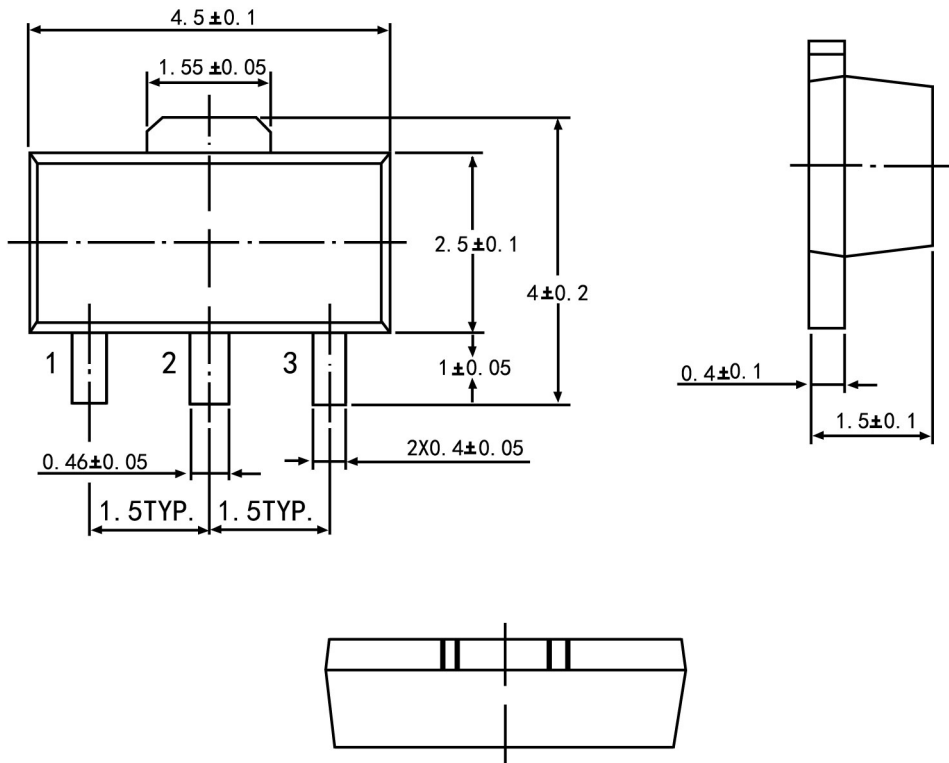
Note :

- a. Pulse Test ; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.





SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions In mm		