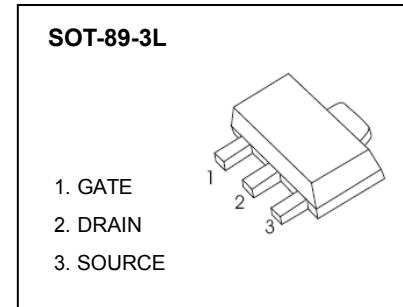


N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100 V	234mΩ@10V	2A
	267mΩ@ 6V	
	278mΩ@4.5V	



FEATURE

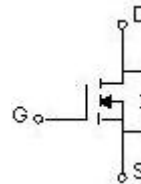
- TrenchFET Power MOSFET
- Low $R_{DS(ON)}$
- Surface Mount Package

APPLICATION

- DC/DC Converters
- Load Switch
- LED Backlighting in LCD TVs

MARKING: 2N10

Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$ 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
Pulsed Drain Current	I_{DM}^*	8	A
Maximum Power Dissipation	P_D	0.5	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	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^{\circ}C$

*Repetitive rating: Pluse width limited by junction temperature.

MOSFET ELECTRICAL CHARACTERISTICS

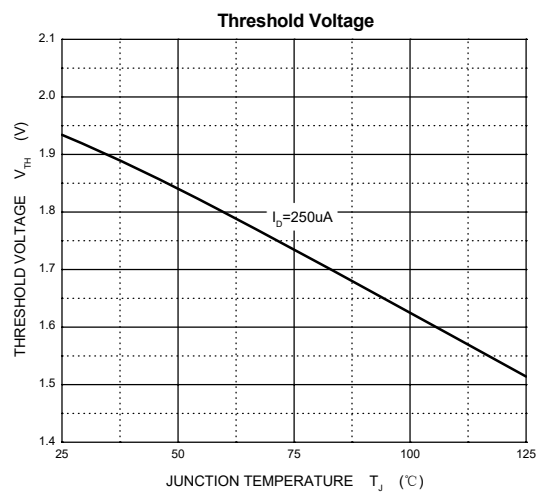
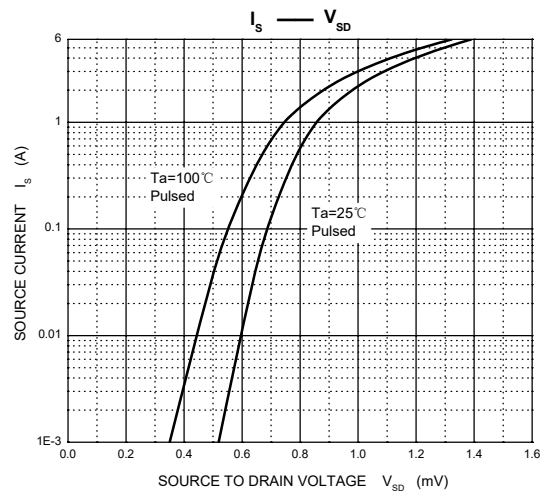
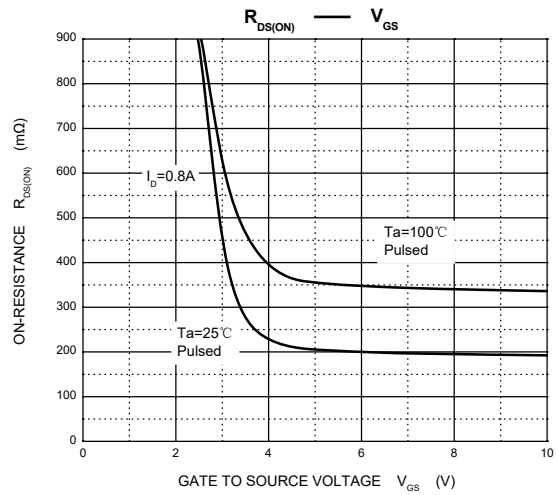
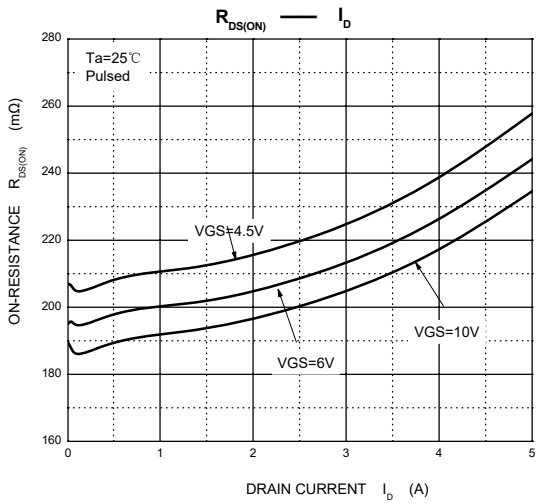
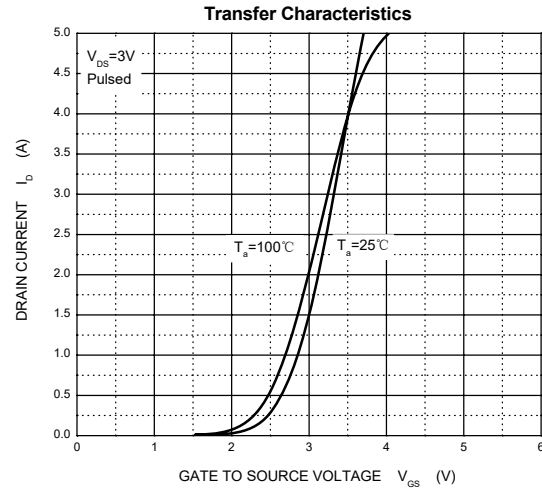
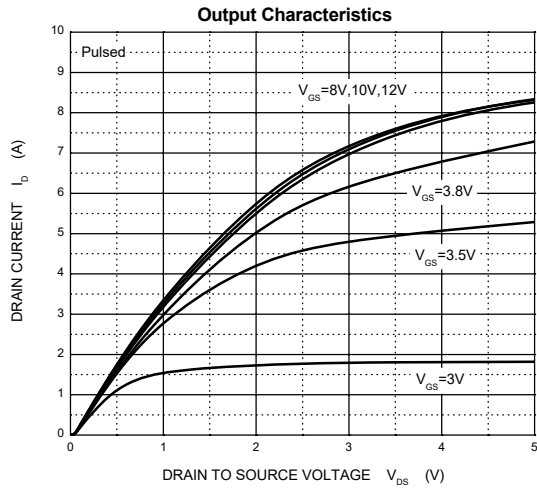
$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
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(note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.2		2.8	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1.5A$			234	m Ω
		$V_{GS} = 6V, I_D = 1A$			267	m Ω
		$V_{GS} = 4.5V, I_D = 0.5A$			278	m Ω
Forward tranconductance (note 1)	g_{FS}	$V_{DS} = 20V, I_D = 1.5A$		2		S
Diode forward voltage (note 1)	V_{SD}	$I_S = 1.3A, V_{GS} = 0V$			1.2	V
DYNAMIC PARAMETERS (note2)						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		190		pF
Output Capacitance	C_{oss}			22		pF
Reverse Transfer Capacitance	C_{rss}			13		pF
Gate Resistance	R_g	$F = 1MHz$	0.3		2.8	Ω
SWITCHING PARAMETERS (note 2)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50V, V_{GEN} = 4.5V$ $R_L = 39\Omega, R_G = 1\Omega, I_D = 1.3A$			45	ns
Turn-on rise time	t_r				39	ns
Turn-off delay time	$t_{d(off)}$				26	ns
Turn-off fall time	t_f				20	ns
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 4.5V, I_D = 1.6A$			5.8	nC
Gate-Source Charge	Q_{gs}			0.75		nC
Gate-Drain Charge	Q_{gd}			1.4		nC

Notes : 1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.

2. Guaranteed by design, not subject to production testing.

Typical Characteristics





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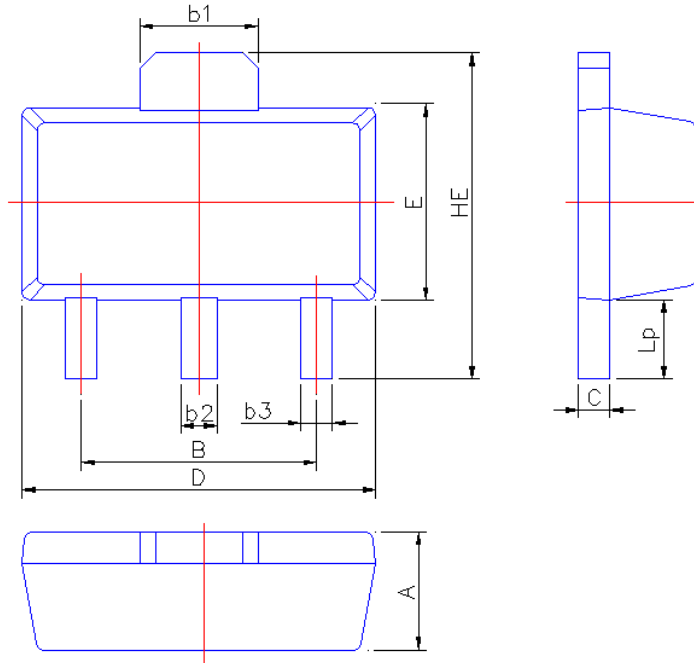
SOT-89

2N10



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SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	2.95	3.05
b1	1.45	1.70
b2	0.45	0.56
b3	0.35	0.50
C	0.35	0.50
D	4.40	4.60
E	2.35	2.55
HE	3.90	4.40
Lp	0.90	1.10