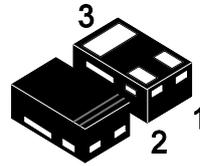
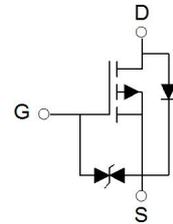


**P-channel Trench MOSFET**
**FEATURE**

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate


**SOD-883**
**MARKING: 39**

**APPLICATION**

- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
-20V	520mΩ@-4.5V	-0.7A
	780mΩ@-2.5V	
	950mΩ(TYP)@-1.8V	

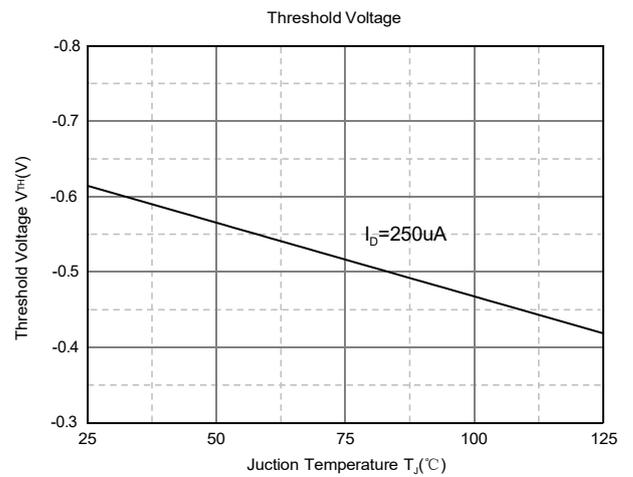
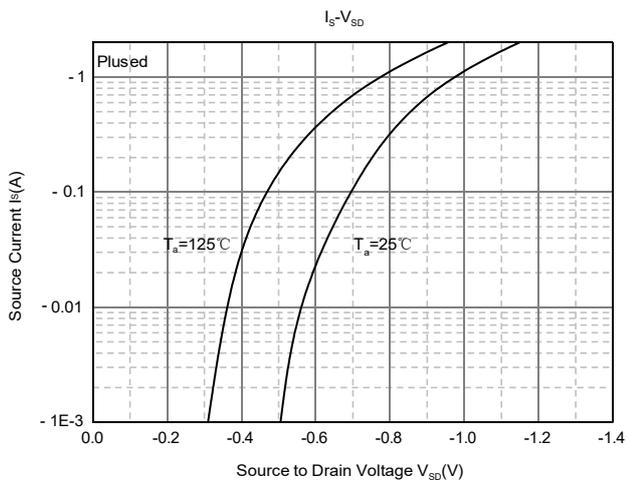
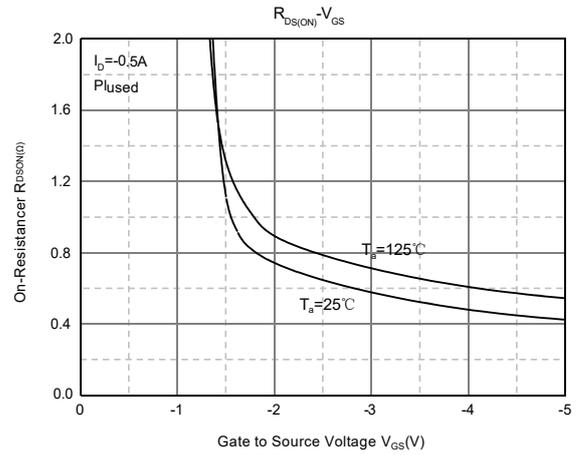
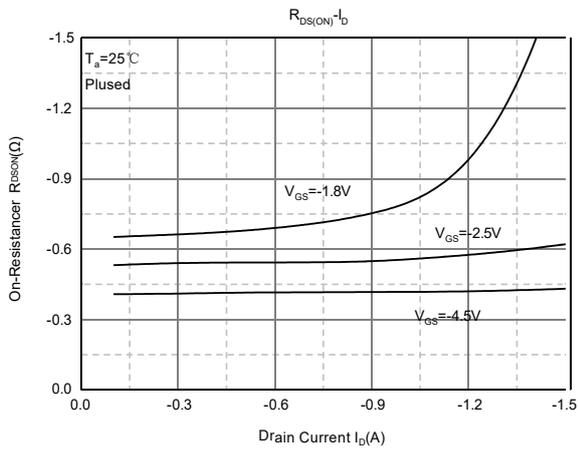
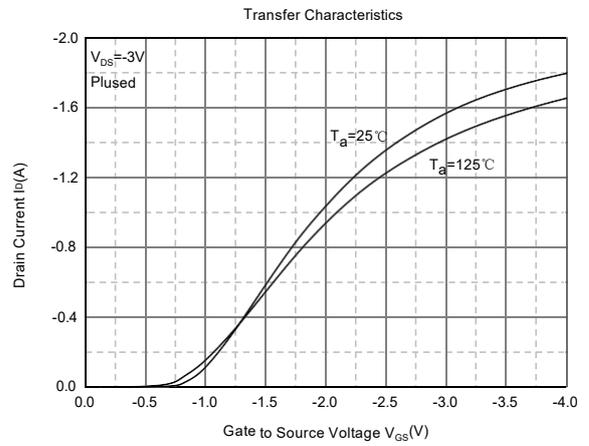
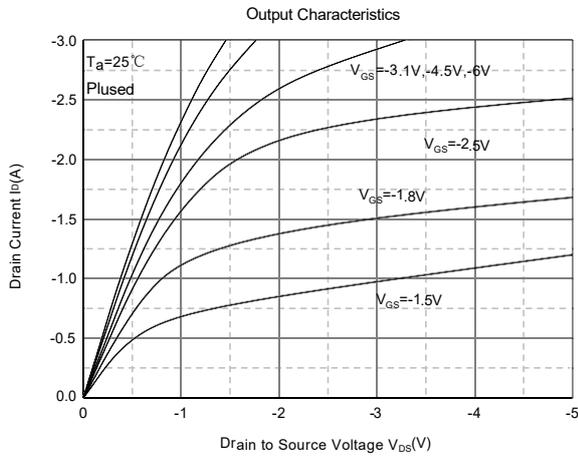
**Absolute Maximum Ratings (TA=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Typical Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current (note 1)	$I_D$	-0.7	A
Pulsed Drain Current (tp=10us)	$I_{DM}$	-1.2	A
Power Dissipation (note 1)	$P_D$	100	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{θJA}$	1250	°C/W
Operation Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~ 150	°C
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	°C

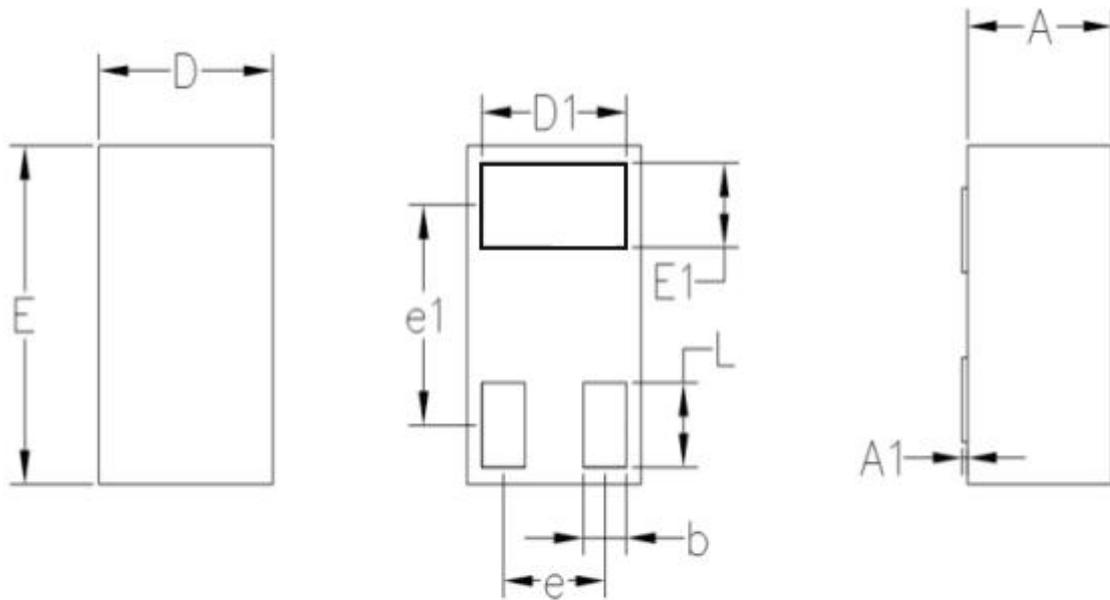
## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 20$	$\mu A$
Gate threshold voltage (note 2)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.35	-0.61	-1.1	V
Drain-source on-resistance(note 2)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1A$		450	520	$m\Omega$
		$V_{GS} = -2.5V, I_D = -0.8A$		650	780	$m\Omega$
		$V_{GS} = -1.8V, I_D = -0.5A$		950		$m\Omega$
Forward tranconductance(note 2)	$g_{FS}$	$V_{DS} = -10V, I_D = -0.54A$		1.2		S
Diode forward voltage	$V_{SD}$	$I_S = -0.5A, V_{GS} = 0V$			-1.2	V
<b>DYNAMIC PARAMETERS(note 4)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -16V, V_{GS} = 0V, f = 1MHz$		113		pF
Output Capacitance	$C_{oss}$			15		pF
Reverse Transfer Capacitance	$C_{rss}$			9		pF
<b>SWITCHING PARAMETERS (note 4)</b>						
Turn-on delay time (note 3)	$t_{d(on)}$	$V_{DD} = -4.5V, V_{GS} = -10V,$ $I_D = -200mA, R_{GEN} = 10\Omega$		9		ns
Turn-on rise time (note 3)	$t_r$			5.7		ns
Turn-off delay time (note 3)	$t_{d(off)}$			32.6		ns
Turn-off fall time (note 3)	$t_f$			20.3		ns

## Typical Characteristics



### SOD-883 Package Outline Drawing



SYMBOL	DIMENSIONS IN MM		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	—	0.05
D	0.55	0.60	0.65
E	0.95	1.00	1.05
D1	0.45	0.50	0.55
E1	0.20	0.25	0.30
L	0.20	0.25	0.30
b	0.10	0.15	0.20
e	0.35BSC		
e1	0.65BSC		