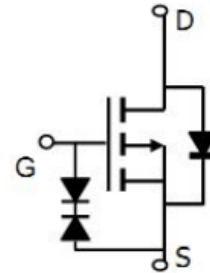


»Features

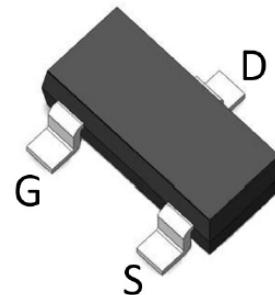
$V_{DS} = -50V$
 $I_D = -0.13A$
 $R_{DS(ON)} @V_{GS} = -10V, TYP = 2\Omega$
 $R_{DS(ON)} @V_{GS} = -4.5V, TYP = 2.5\Omega$

»Pin Configurations



»General Description

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-23 for Surface Mount Package.



»Absolute Maximum Ratings @ $T_A=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-50	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-0.13	A
I_{DM}	Pulsed Drain Current (tp=10s)	-0.5	A
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient (t \leq 5s)	350	$^\circ C/W$
T_J, T_{stg}	Operation Junction And Storage Temperature Range	-55~+150	$^\circ C$

»Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	$V_{GS}=0, I_D=250\mu\text{A}$	-50			V
$V_{GS(th)}$	Gate threshold voltage	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-0.8		-2.0	V
I_{GSS}	Gate-body leakage current	$V_{DS}=0, V_{GS}=\pm 10\text{V}$			± 10	μA
I_{DSS}	Zero gate voltage drain current	$V_{DS}=-50\text{V}, V_{GS}=0\text{V}$			-10	μA
		$V_{DS}=-40\text{V}, V_{GS}=0\text{V}$			-100	nA
$R_{DS(on)}$	Drain-source on-resistance ^a	$V_{GS}=-10\text{V}, I_D=-0.13\text{A}$		2	5	Ω
		$V_{GS}=-4.5\text{V}, I_D=-0.13\text{A}$		2.5	6	Ω
g_{FS}	Forward transconductance ^a	$V_{DS}=-25\text{V}, I_D=-0.13\text{A}$	50			mS
V_{SD}	Diode forward voltage	$I_S=-0.13\text{A}, V_{GS}=0\text{V}$			-1.0	V
Dynamic						
C_{iss}	Input capacitance	$V_{DS}=-25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		25		pF
C_{oss}	Output capacitance			15		
C_{rss}	Reverse transfer capacitance ^b			3.5		
Switching^b						
$t_{d(on)}$	Turn-on delay time	$V_{GS}=-10\text{V}, V_{DS}=-15\text{V}$ $I_D=-200\text{mA}, R_{GEN}=25\Omega$		16.7		nS
t_r	Rise time			8.6		
$t_{d(off)}$	Turn-off delay time			17.9		
t_f	Fall time			5.3		

Notes :

 a. Pulse Test : Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to producing.

»Typical Performance Characteristics (T_J = 25 °C, unless otherwise noted)

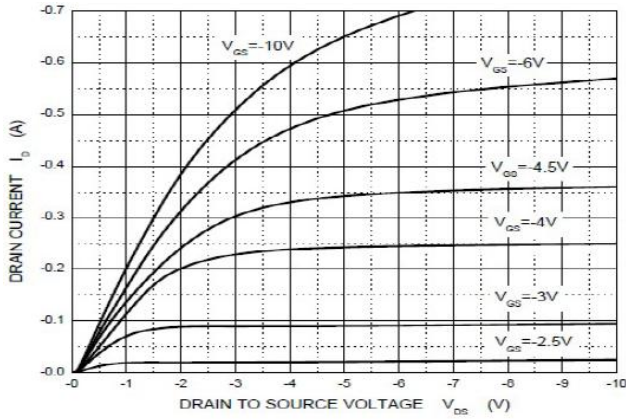


Figure1. Output Characteristics

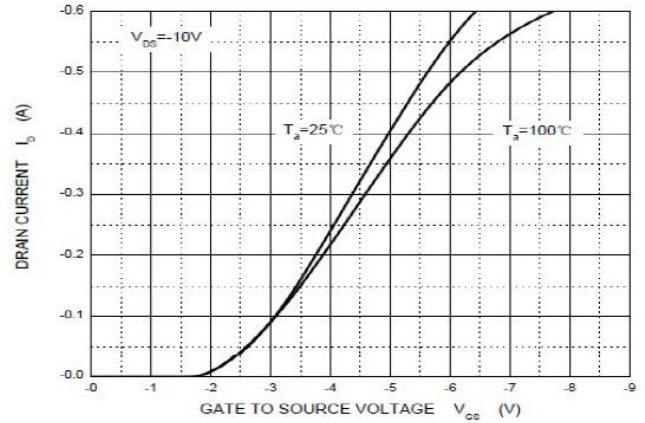


Figure2. Transfer Characteristics

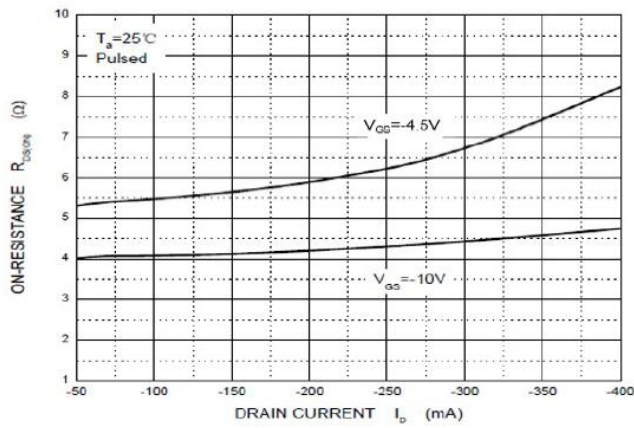


Figure3. Drain-Source on Resistance

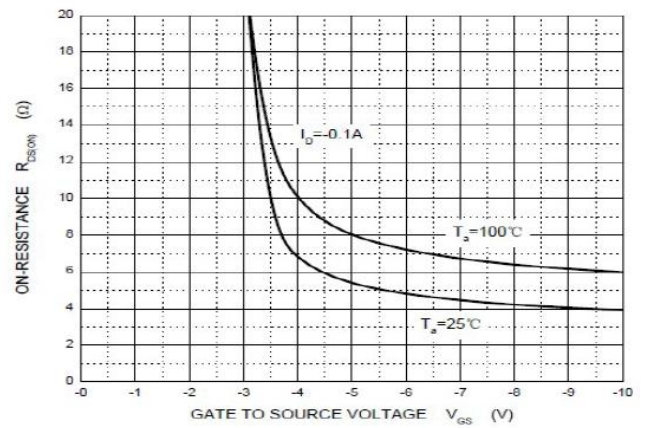


Figure4. Drain-Source on Resistance

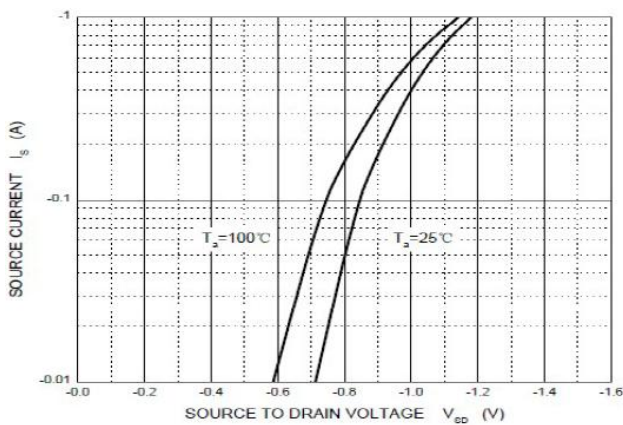


Figure5. Diode Forward Voltage vs. current

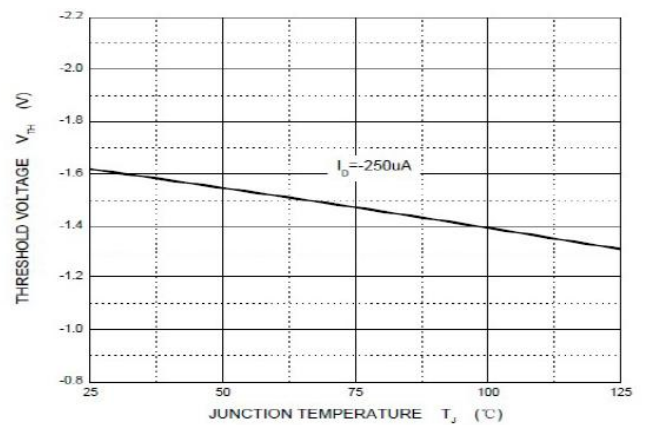
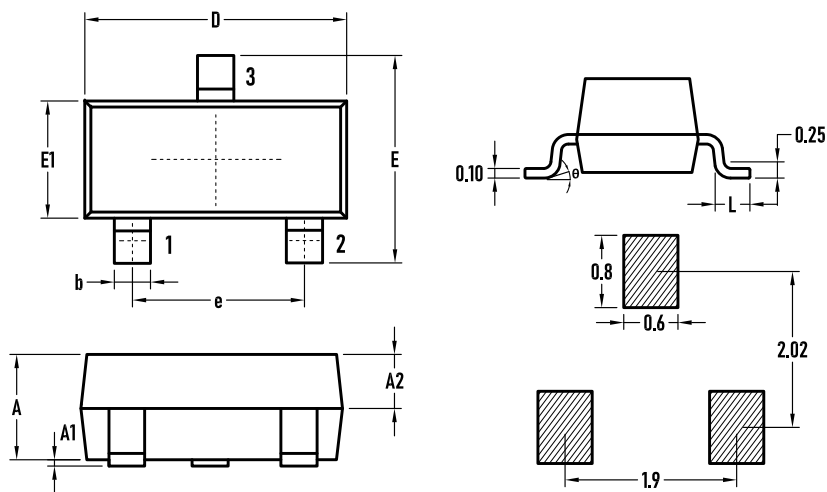


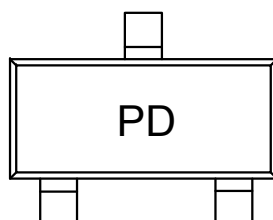
Figure6. Gate Threshold vs. Junction Temperature

»Package Information-SOT23



SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.90	1.00	1.10
A1	0.02	0.06	0.10
A2	–	0.60	–
D	2.85	2.90	2.95
b	0.37	0.40	0.43
E	2.35	2.40	2.45
E1	1.25	1.30	1.35
e	1.85	1.90	1.95
L	0.35	0.40	0.48
θ	0	–	6°

»Marking



»Ordering information

Order code	Package	Base qty	Delivery mode
BSS84	SOT-23	3K	Tape and reel