

»Features

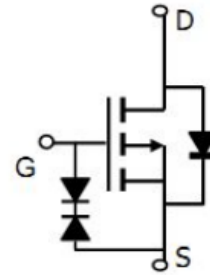
$V_{DS} = -50V$

$I_D = -0.13A$

$R_{DS(ON)} @ V_{GS} = -10V, TYP = 2\Omega$

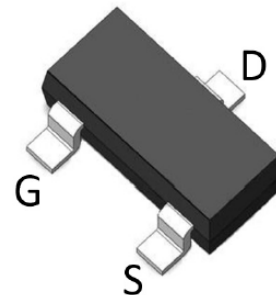
$R_{DS(ON)} @ V_{GS} = -4.5V, TYP = 2.5\Omega$

»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 ($t_p=10s$)	-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 =250μA	-50			V
V _{GS(th)}	Gate threshold voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.8		-2.0	V
I _{GSS}	Gate-body leakage current	V _{DS} =0, V _{GS} =±10V			±10	μA
I _{DSS}	Zero gate voltage drain current	V _{DS} =-50V, V _{GS} =0V			-10	μA
		V _{DS} =-40V, V _{GS} =0V			-100	nA
R _{DS(on)}	Drain-source on-resistance ^a	V _{GS} =-10V, I _D =-0.13A		2	5	Ω
		V _{GS} =-4.5V, I _D =-0.13A		2.5	6	Ω
g _{FS}	Forward transconductance ^a	V _{DS} =-25V, I _D =-0.13A	50			mS
V _{SD}	Diode forward voltage	I _S =-0.13A,V _{GS} =0V			-1.0	V
Dynamic						
C _{iss}	Input capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz		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} =-10V,V _{DS} =-15V I _D =-200mA, R _{GEN} =25Ω		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)

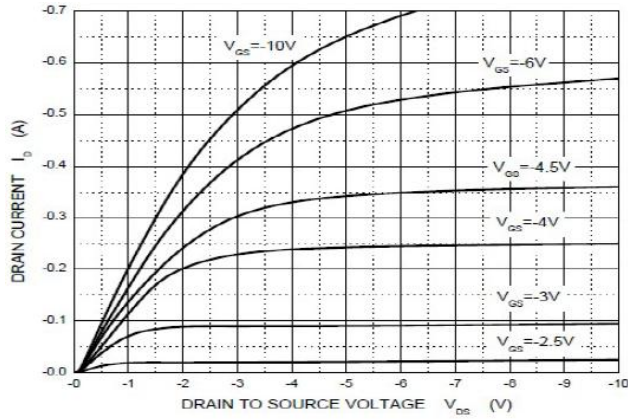


Figure1. Output Characteristics

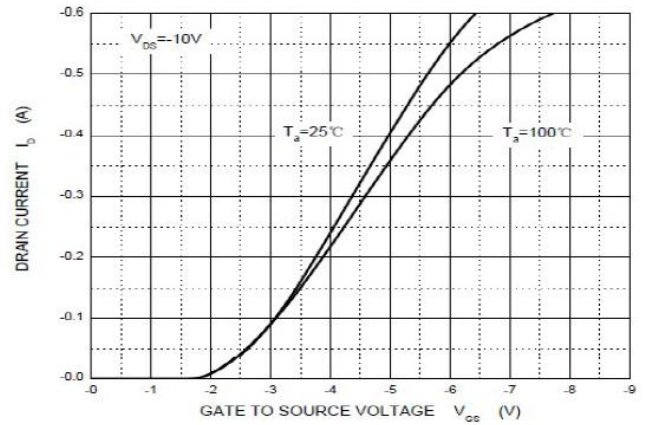


Figure2. Transfer Characteristics

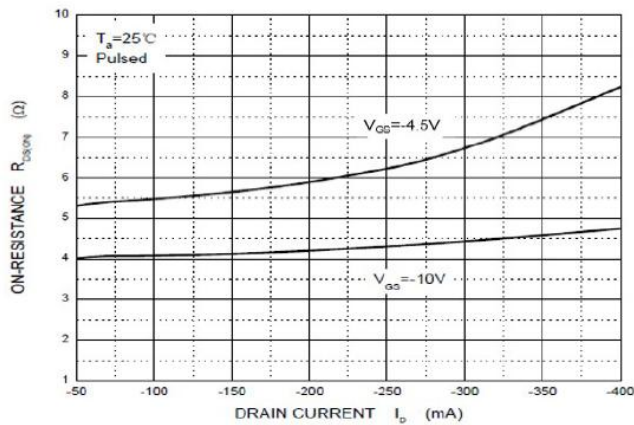


Figure3. Drain-Source on Resistance

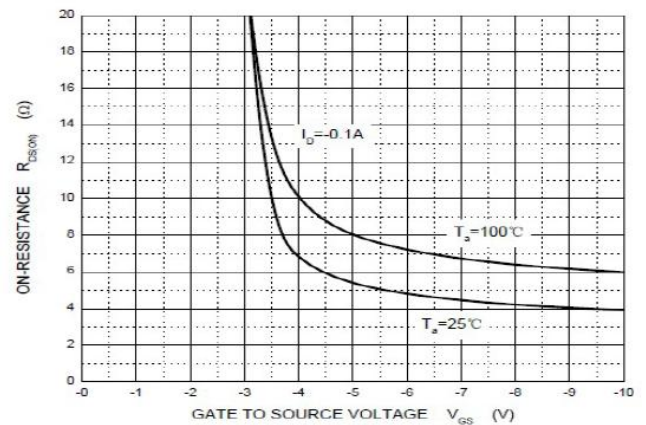


Figure4. Drain-Source on Resistance

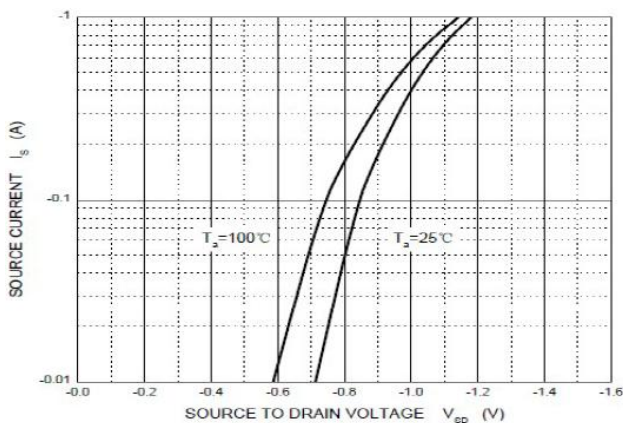


Figure5. Diode Forward Voltage vs. current

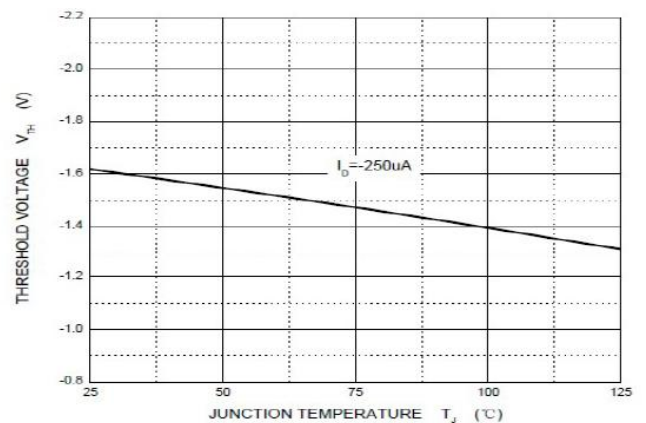
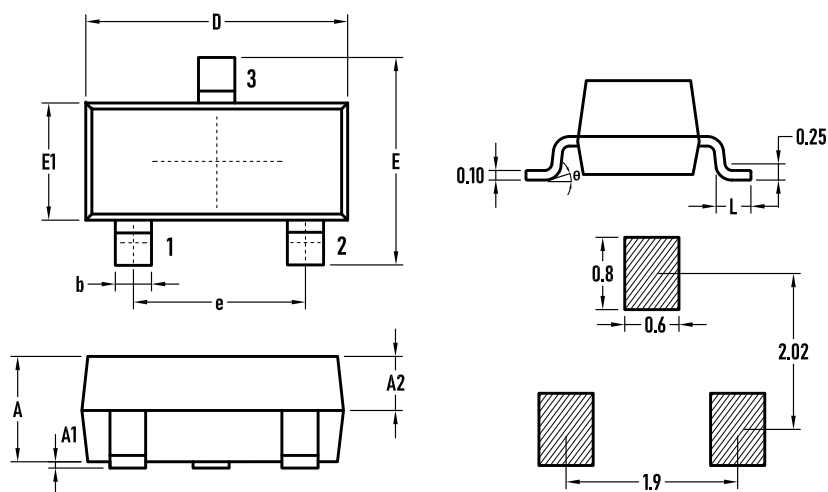


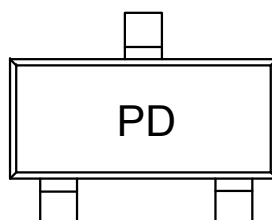
Figure6. Gate Threshold vs. Junction Temperature

»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

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