



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
50V	0.92Ω@10V	0.3A
	0.98Ω@4.5V	
	1.2Ω@2.5V	

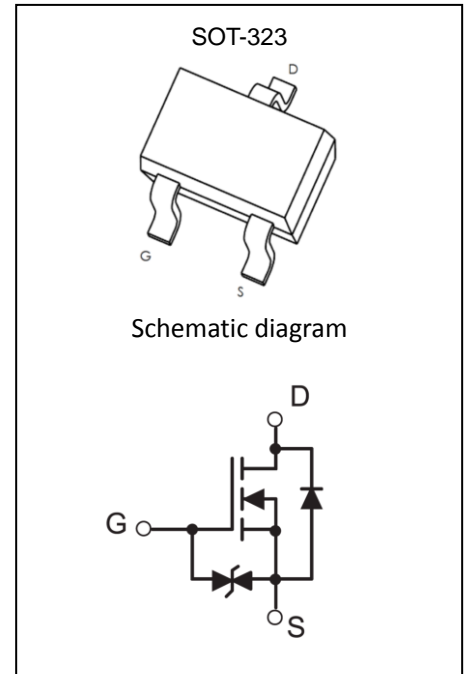
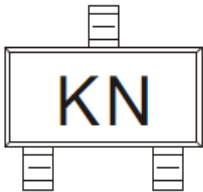
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

MARKING



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	50	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,4}	I_D	0.3	A
Pulsed Drain Current ²	I_{DM}	1.2	A
Power Dissipation ^{4,5}	P_D	0.3	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	416	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

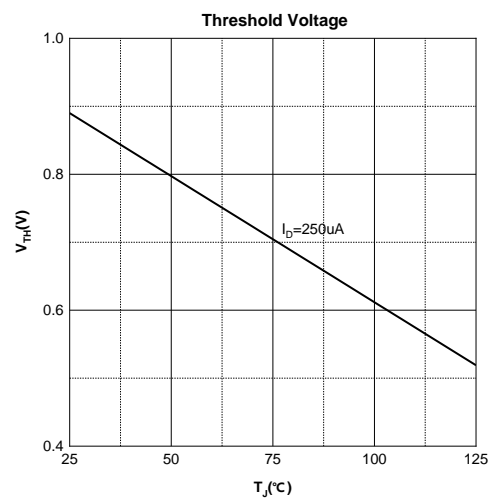
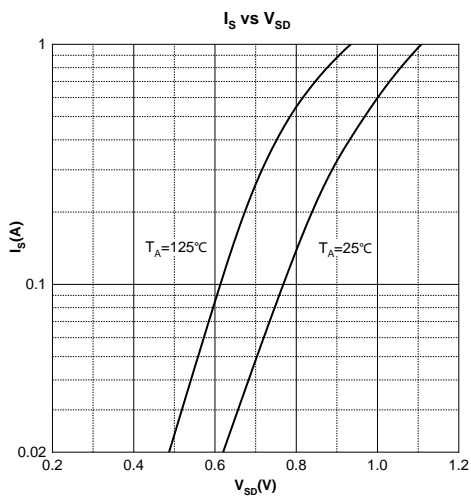
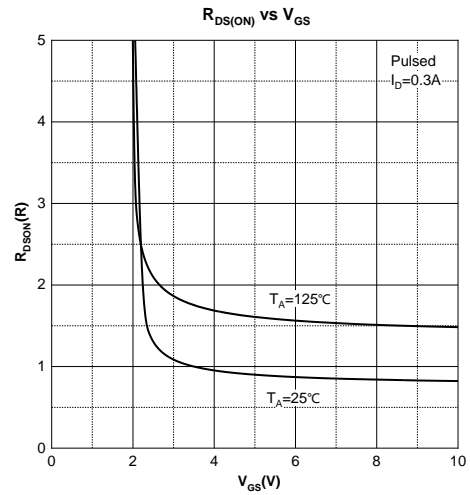
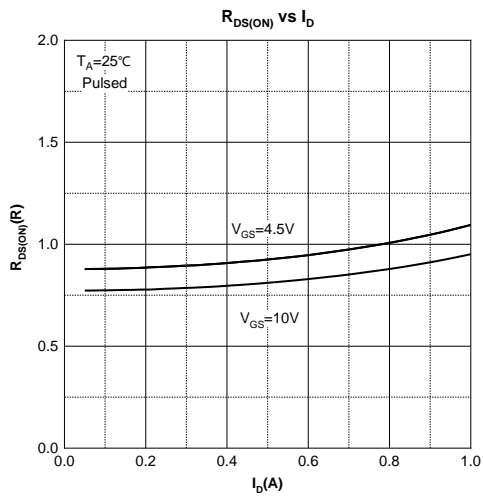
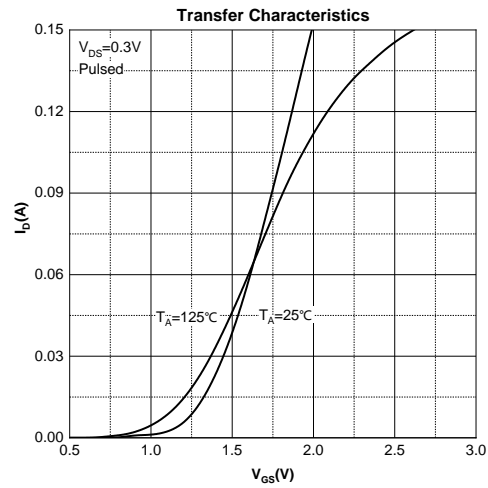
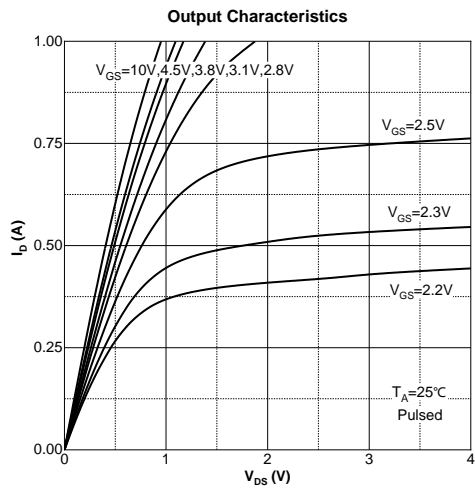
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	50			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 50V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 2	μA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	0.9	1.5	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.3A$		0.92	2.5	Ω
		$V_{GS} = 4.5V, I_D = 0.2A$		0.98	3	
		$V_{GS} = 2.5V, I_D = 0.01A$		1.2	4.5	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		30		pF
Output Capacitance	C_{oss}			5.2		
Reverse Transfer Capacitance	C_{rss}			3.3		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		157		
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 5V, V_{GS} = 5V, I_D = 10mA,$ $R_G = 10\Omega, R_L = 500\Omega$		15		ns
Turn-on Rise Time	t_r			35		
Turn-off Delay Time	$t_{d(off)}$			80		
Turn-off Fall Time	t_f			80		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 0.3A$			1.2	V

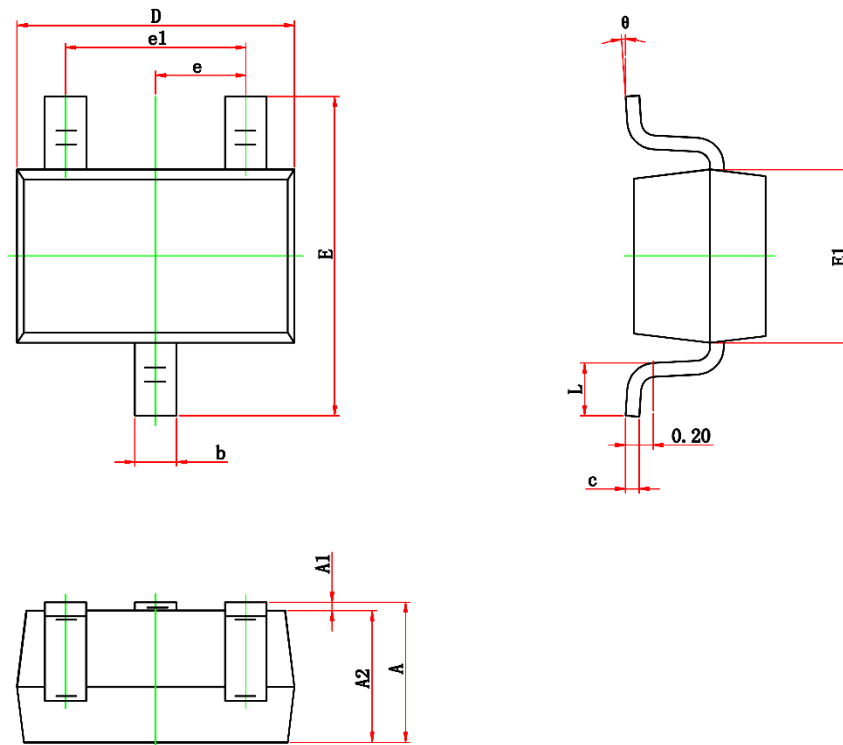
Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



SOT-323 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.800	1.100	0.031	0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.100	0.031	0.043
b	0.200	0.400	0.008	0.016
c	0.050	0.150	0.002	0.006
D	1.900	2.200	0.075	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP.		0.026TYP.	
e1	1.200	1.400	0.047	0.055
L	0.200	0.460	0.008	0.018
θ	0°	8°	0°	8°