

N Channel Enhancement Mode Power MOSFET

Features

- High switching speed with a low gate charge
- 60V, 0.3A, N-Channel
- $R_{DS(on)}=2.2\ \Omega$ (Max.)@ $V_{GS}=10V$
- With ESD > 2KV

Applications

- Networking
- LED Lighting Application
- Power Tools
- DC-DC Power Management

Absolute Maximum Ratings

$T_C=25^\circ\text{C}$, unless otherwise noted.

Parameter		Symbol	Value	Unit
Drain-source Voltage		V_{DS}	60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current-Continuous	$T_C=25^\circ\text{C}$	I_D	0.3	A
	$T_C=70^\circ\text{C}$		0.24	A
Drain Current Pulsed		I_{DM}	1.2	A
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	200	mW
Operating Junction Temperature Range		T_J	-55~150	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-55~150	$^\circ\text{C}$

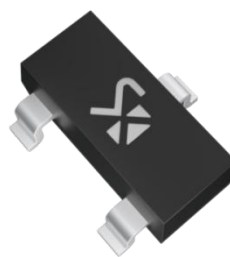
Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient, Max.	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case, Max.	$R_{\theta JC}$	215	$^\circ\text{C/W}$

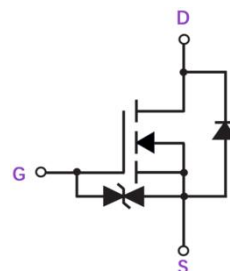
Electrical Characteristics

$T_J=25^\circ\text{C}$, unless otherwise noted.

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source Breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V, T_J=25^\circ\text{C}$			1	μA



SOT-23

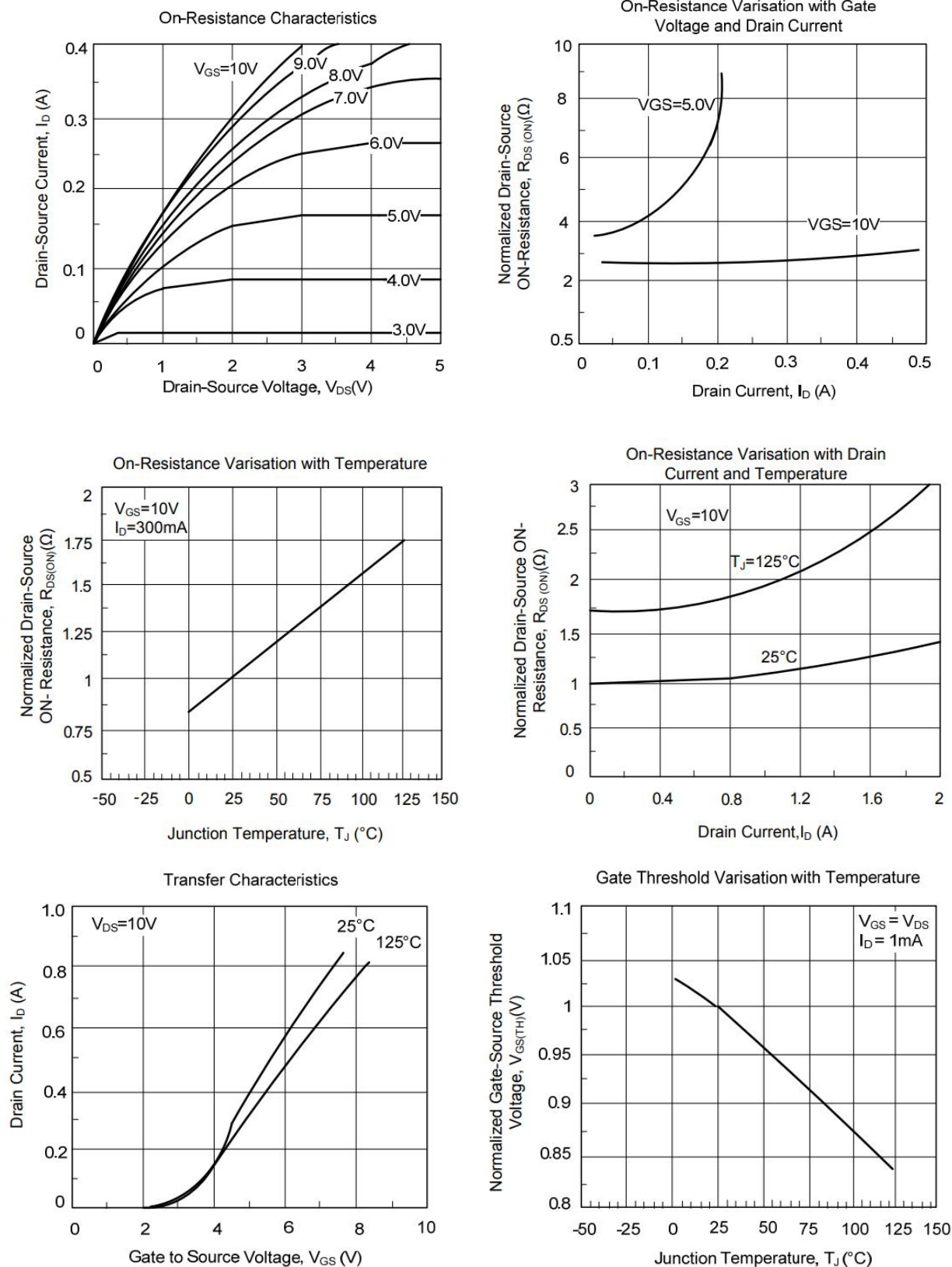


Gate-source leakage current	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+10	μA
		V _{GS} =-20V, V _{DS} =0V			-10	μA
On Characteristics						
Gate Threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.6	2.5	V
Static Drain to Source on resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.3A		1800	2200	m Ω
		V _{GS} = 4.5V, I _D = 0.2A		1550	3000	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		50		pF
Output Capacitance	C _{oss}			25		pF
Reverse Capacitance	C _{rss}			5		pF
Switching Characteristics						
Turn-On Time	t _{d(on)}	V _{DD} =30V, R _L =150Ω, I _D =200mA, V _{GS} =10V, R _G =25Ω		20		nS
Turn-Off Time	t _{d(off)}			22		nS
Source-Drain Diode Characteristics						
Continuous Diode Forward Current	I _S				300	mA
Pulsed Diode Forward Current	I _{SM}				0.8	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =300mA			1.5	V

※Note 1 : The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

2 : $R_{DS(on)}$ calculated by SOT-23 Package Type

Typical Characteristics



Package Information

SOT-23

Dimensions in mm

