

## 60V N-Channel MOSFET

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
60V	5Ω@10V	340mA
	5.3Ω@4.5V	

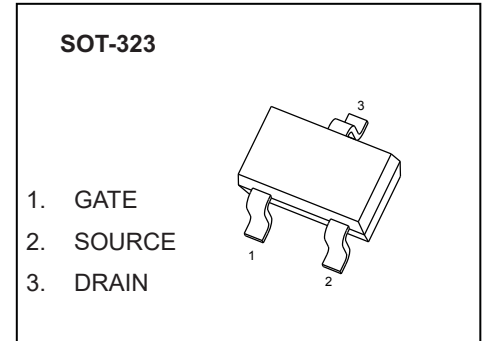
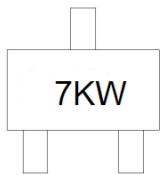
### Feature

- High density cell design for Low  $R_{DS(on)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected Gate HBM 2KV

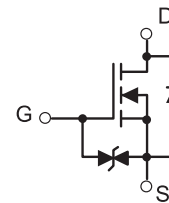
### Application

- Load Switch for Portable Devices
- DC/DC Converter

### MARKING:



### Equivalent Circuit



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	340	mA
Power Dissipation <sup>(1)</sup>	$P_D$	150	mW
Thermal Resistance from Junction to Ambient <sup>(1)</sup>	$R_{\theta JA}$	833	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~ +150	°C

**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	60			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 48V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±10	μA
Gate threshold voltage*	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1	1.4	2.5	V
Drain-source on-resistance*	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 200mA		1.4	5.3	Ω
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 500mA		1.3	5	
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 300mA			1.5	V
Recovered charge	Q <sub>r</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 300mA, V <sub>R</sub> = 25V, di <sub>s</sub> /dt = -100A/μs		30		nC
<b>Dynamic characteristics**</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0V, f = 1MHz			40	pF
Output Capacitance	C <sub>oss</sub>				30	
Reverse Transfer Capacitance	C <sub>rss</sub>				10	
<b>Switching Characteristics**</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 50V, R <sub>G</sub> = 50Ω,			10	ns
Turn-off delay time	t <sub>d(off)</sub>	R <sub>GS</sub> = 50Ω, R <sub>L</sub> = 250Ω			15	
Reverse recovery Time	t <sub>f</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 300mA, V <sub>R</sub> = 25V, di <sub>s</sub> /dt = -100A/μs		30		
<b>GATE-SOURCE ZENER DIODE</b>						
Gate-Source Breakdown Voltage	BV <sub>GSO</sub>	I <sub>gs</sub> = ±1mA (Open Drain)	±21.5		±30	V

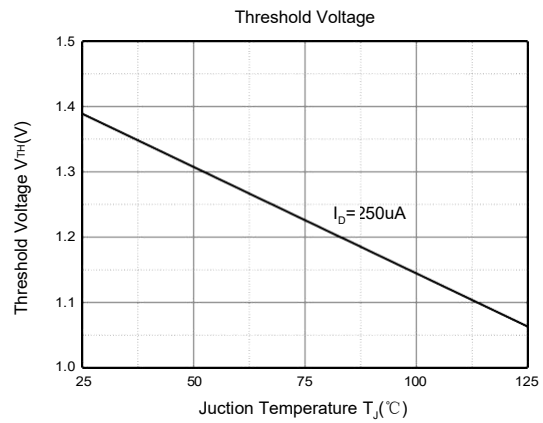
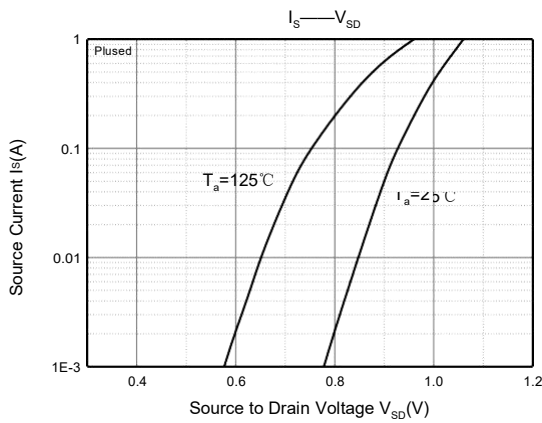
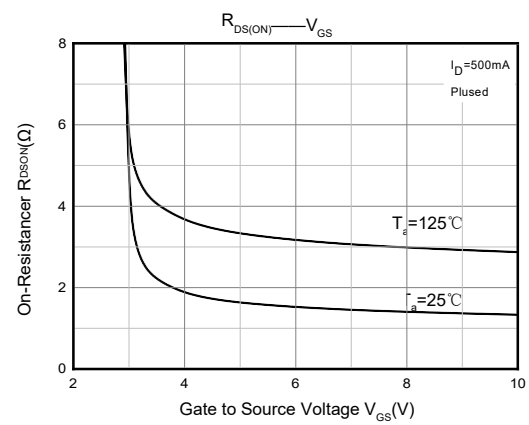
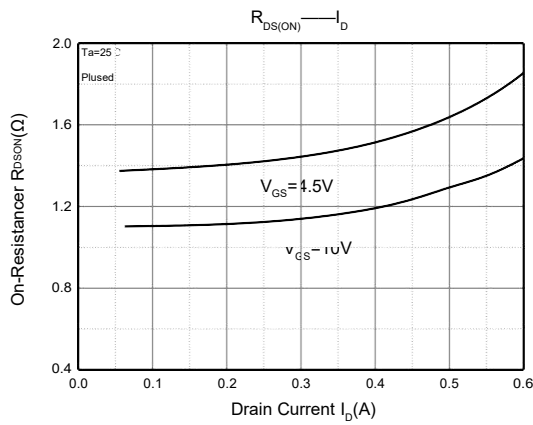
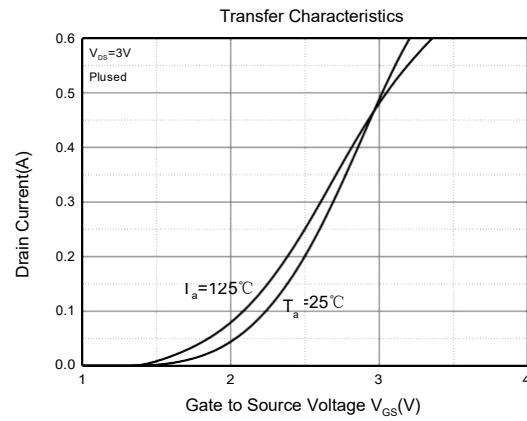
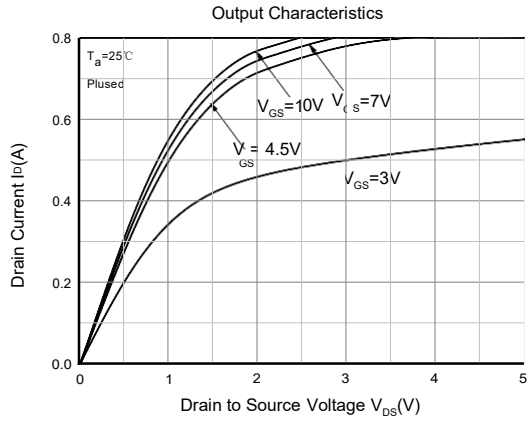
**Notes:**

\*Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%.

\*\*These parameters have no way to verify.

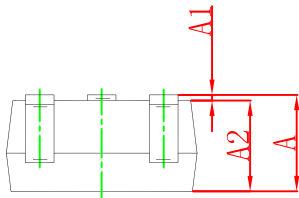
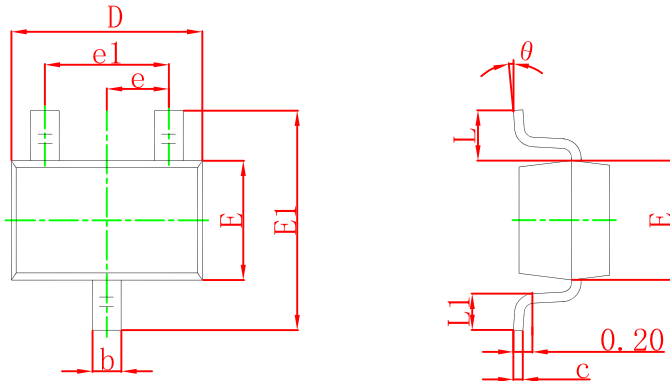


### Typical Electrical and Thermal Characteristic



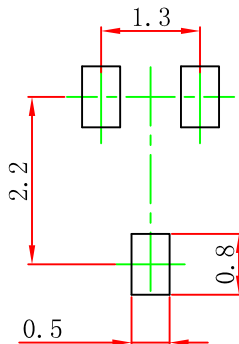


### SOT-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

### SOT-323 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [Shenzhen JingYang](#) manufacturer:*

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#) [IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#)  
[TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#)  
[DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)  
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#)  
[IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [MCQ7328-TP](#) [NTMC083NP10M5L](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#)  
[WMJ80N60C4](#) [BXP2N20L](#) [BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTGR](#) [DMNH15H110SK3-13](#)  
[SLF10N65ABV2](#) [BSO203SP](#) [BSO211P](#) [IPA60R230P6](#)