

Features

- $V_{DSS}=60V$
- $I_D=3.0A$
- $R_{DS(on)}@V_{GS}=10V < 105m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 125m\Omega$
- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

Applications

- Battery protection
- Load switch
- Power management

Mechanical Data

- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE	
Drain-source Voltage	V_{DS}	V	60	
Gate-source Voltage	V_{GS}	V	± 20	
Drain Current	I_D	A	Ta=25°C	3.0
			Ta=100°C	2.4
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	10	
Total Power Dissipation ⁽²⁾	P_D	W	Ta=25°C	1.2
			Ta=100°C	0.8
Storage temperature	T_{stg}	°C	-55 ~+150	
Junction temperature	T_j	°C	-55 ~+150	
Thermal Resistance Junction-to-Ambient ⁽³⁾	$R_{\theta JA}$ ⁽¹⁾	°C /W	104	

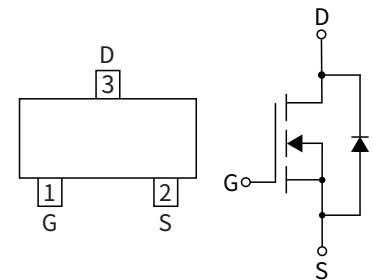
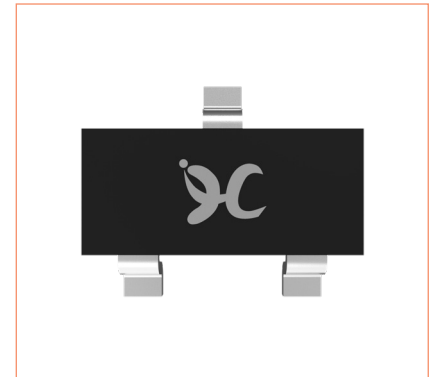
Note :

- (1) Repetitive rating; pulse width limited by max. junction temperature.
- (2) Pd is based on max. junction temperature, using junction-case thermal resistance.
- (3) The value of $R_{\theta JA}$ is measured with the device mounted on the minimum recommend pad size, in the still air environment with TA =25°C .
The maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design.

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	120000	7"

SOT-23



▶ Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	V	60	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	μA	—	—	1
		$V_{GS}=0V, V_{DS}=20V, T_J=150^\circ C$		—	—	100
Gate-Body Leakage Current	I_{GSS1}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
	I_{GSS2}	$V_{GS}=\pm 10V, V_{DS}=0V$	nA	—	—	± 50
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	0.9	—	2.0
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$	m Ω	—	90	105
		$V_{GS}=4.5V, I_D=2A$		—	92	125
Diode Forward Voltage	V_{SD}	$I_S=3.0A, V_{GS}=0V$	V	—	0.9	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	3.0

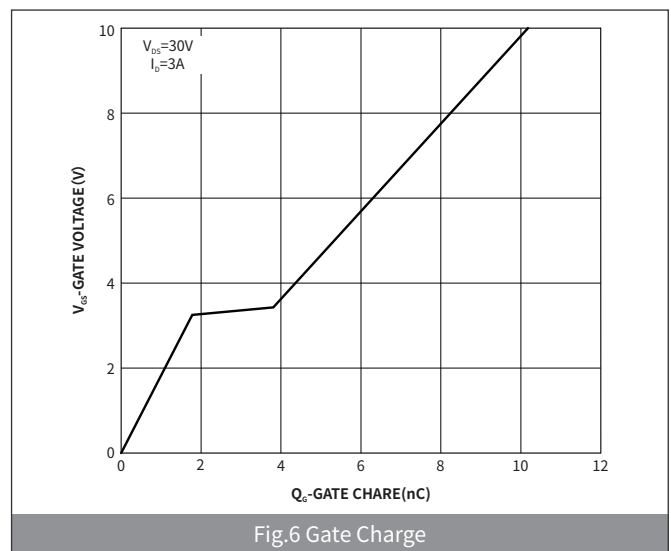
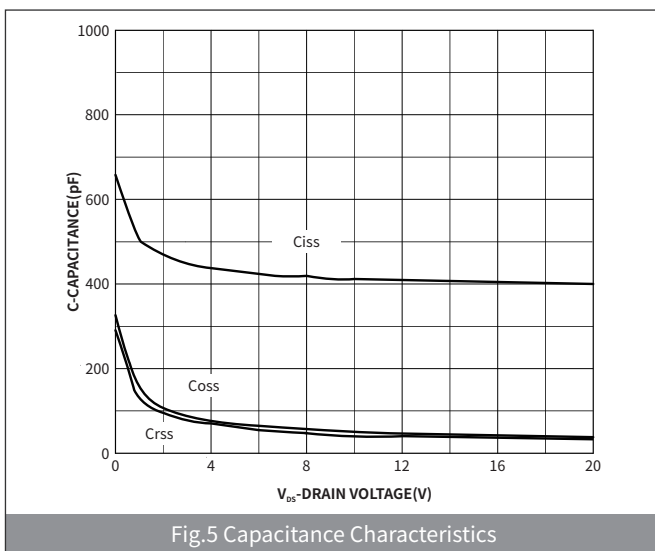
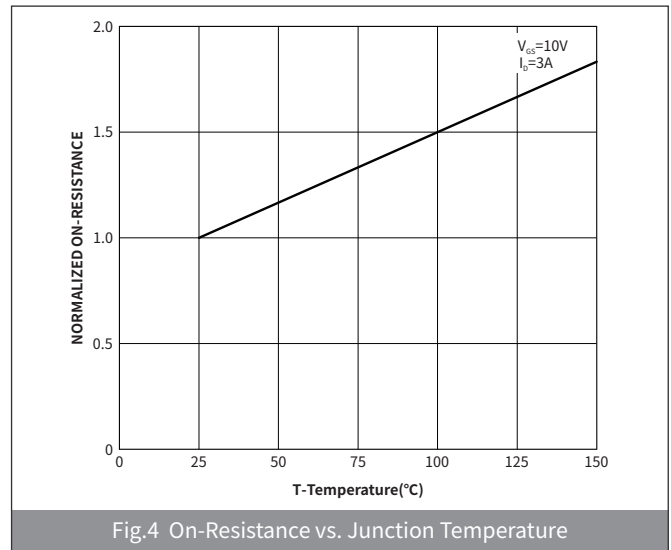
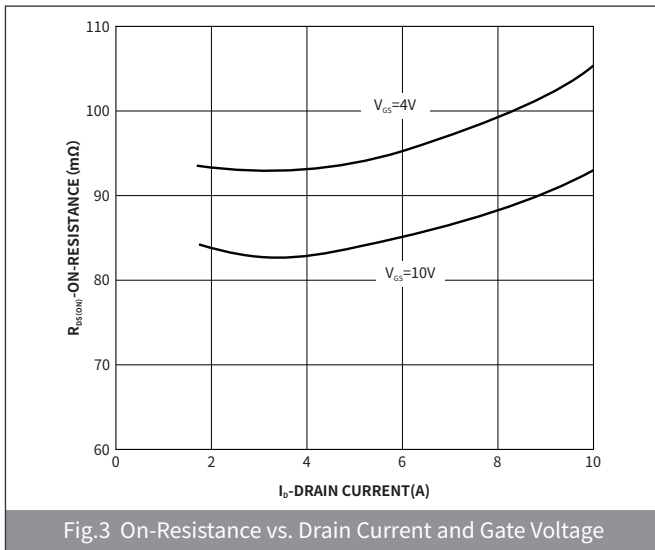
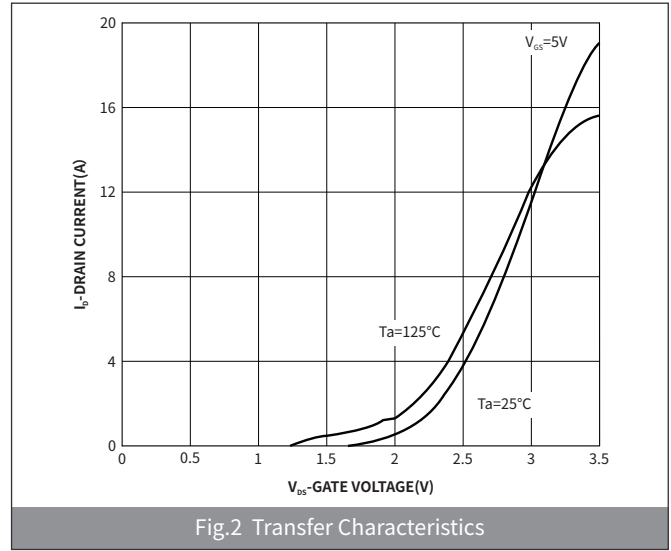
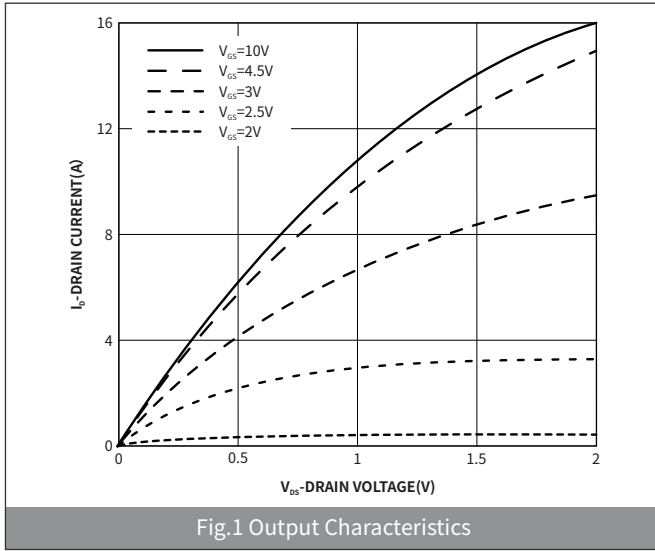
▶ Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$	pF	—	247	—
Output Capacitance	C_{oss}			—	34	—
Reverse Transfer Capacitance	C_{rss}			—	19.5	—

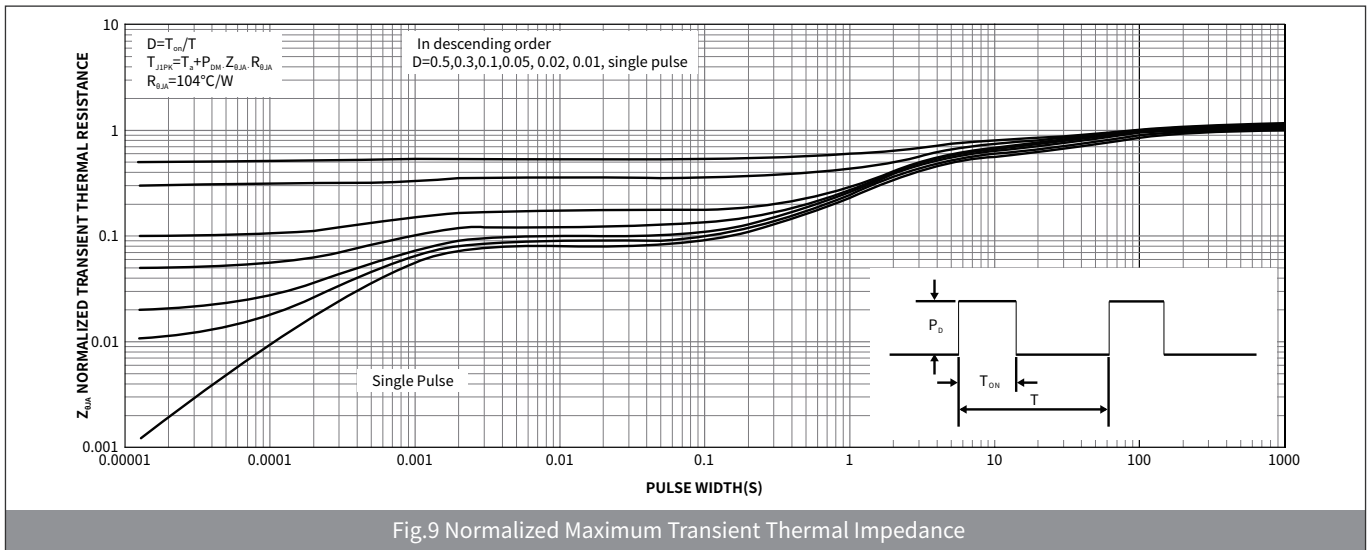
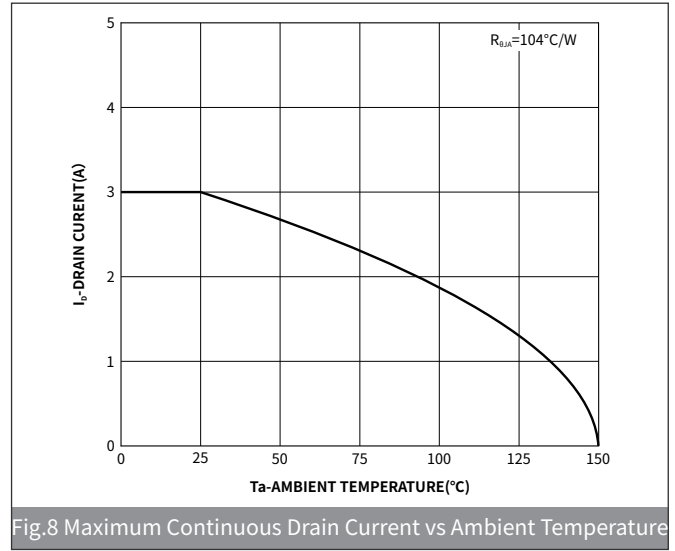
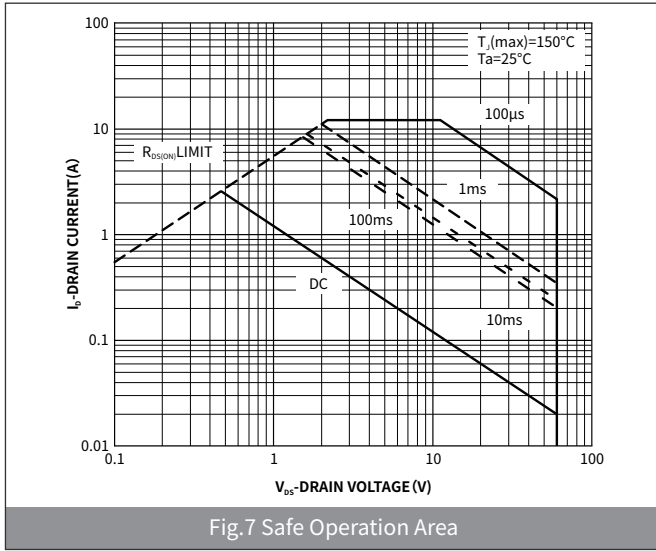
▶ Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=30V, I_D=3.0A$	nC	—	6	—
Gate-Source Charge	Q_{gs}			—	1	—
Gate-Drain Charge	Q_{gd}			—	1.3	—
Reverse Recovery Charge	Q_{rr}	$I_F=3.0A, di/dt=100A/\mu s$	nC	—	6.99	—
Reverse Recovery Time	t_{rr}		ns	—	32.6	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DS}=30V, I_D=3.0A$ $R_{GEN}=6\Omega$	ns	—	6	—
Turn-on Rise Time	t_r			—	15	—
Turn-off Delay Time	$t_{D(off)}$			—	15	—
Turn-off fall Time	t_f			—	10	—

► Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



► Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



► **Package Outline Dimensions** (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

► **Suggested Pad Layout**

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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

Click to view products by [hongjiacheng](#) 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](#)