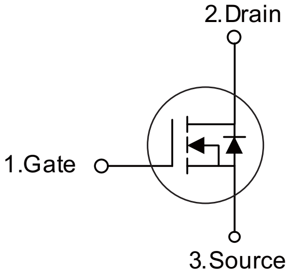
■ PRODUCT CHARACTERISTICS

VDSS	100V
R_{DS}(on)max(V_{GS} @=10 V)	130mΩ
R_{DS}(on)max(V_{GS} @=4.5 V)	180mΩ
ID	5

Symbol



■ APPLICATIONS

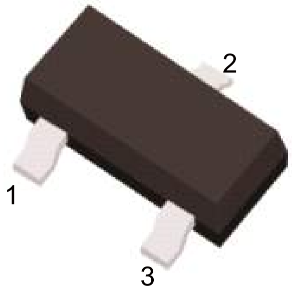
Load/Power Switching

Interfacing Switching

■ FEATURES

High dense cell design for extremely low $R_{DS(ON)}$

Exceptional on-resistance and maximum DC current capability



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT5N10B2	SOT-23	3000pieces/Reel

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current (V_{GS}=4.5V, T_A= 25°C) (Note 2)	I_D	5	A
Pulsed Drain Current (Note 3, 4)	I_{DM}	10	A
Power Dissipation (T_A= 25°C)	P_D	0.35	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Surface mounted on 1 in^2 copper pad of FR4 board; 270°C/W when mounted on min. copper pad.
3. Repetitive Rating: Pulse width limited by maximum junction temperature.
4. Pulse width ≤300μs, duty cycle≤2%.

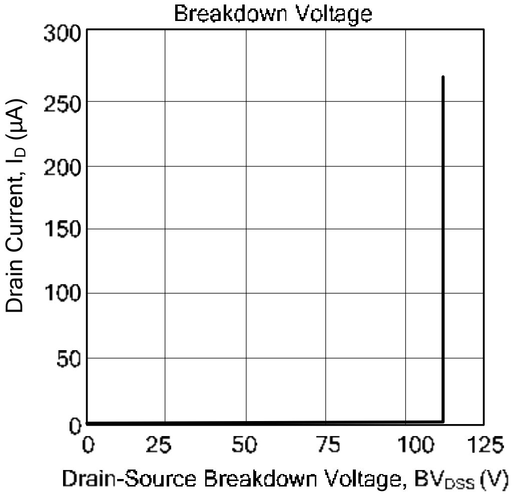
■ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} =0V, I_D =250μA	100	-	-	V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Reference to 25°C, I_D=1mA	-	0.05	-	V/°C
Drain-Source Leakage Current	I_{DSS}	V_{DS} =100V,V_{GS} =0V	-	-	10	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	-	3.0	V
Drain to Source On-state Resistance	$R_{DS(ON)}$	V_{GS} =10V, I_D =3.0A	-	-	130	mΩ
		V_{GS} =4.5V, I_D =2.0A	-	-	180	mΩ
Dynamic characteristics						
Input Capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f =1.0MHz	-	490	-	pF
Output Capacitance	C_{OSS}		-	41	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	33	-	pF
Switching characteristics						
Total Gate Charge (Note)	Q_G	V_{GS} =4.5V, V_{DS} =48V, I_D =3A	-	18	-	nC
Gate Source Charge	Q_{GS}		-	3.76	-	nC
Gate Drain Charge	Q_{GD}		-	8.5	-	nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	V_{GS}=10V, V_{DS}=30V, I_D=1A, R_D =30Ω, R_G =3.3Ω	-	22	-	ns
Turn-ON Rise Time	t_R		-	18	-	ns
Turn-OFF Delay Time	$t_{D(OFF)}$		-	190	-	ns
Turn-OFF Fall-Time	t_F		-	65	-	ns
Source-drain diode ratings and characteristics						
Drain-Source Diode Forward Voltage (Note)	V_{SD}	I_S =1.2A, V_{GS} =0V	-	-	1.2	V
Reverse Recovery Time	t_{rr}	I_S=3A,V_{GS}=0V, dI/dt=100A/μs	-	25	-	ns
Reverse Recovery Charge	Q_{rr}		-	26	-	nC

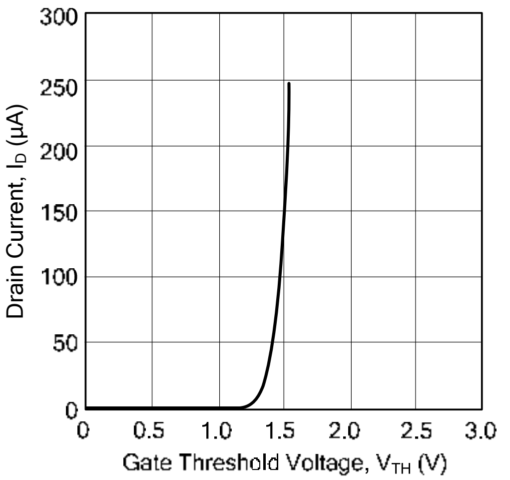
Note: Pulse width ≤300μs, duty cycle≤2%.

■ TYPICAL CHARACTERISTICS

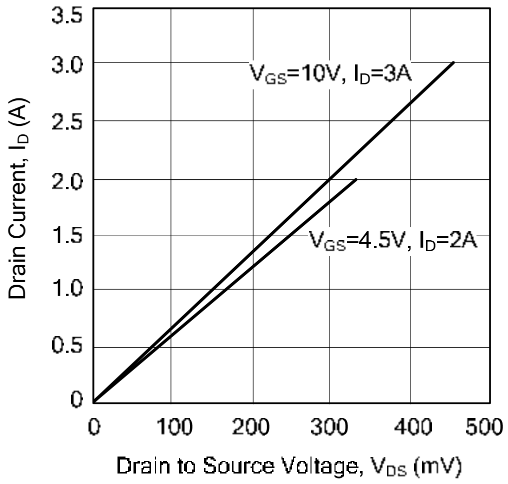
Drain Current vs. Drain-Source Breakdown Voltage



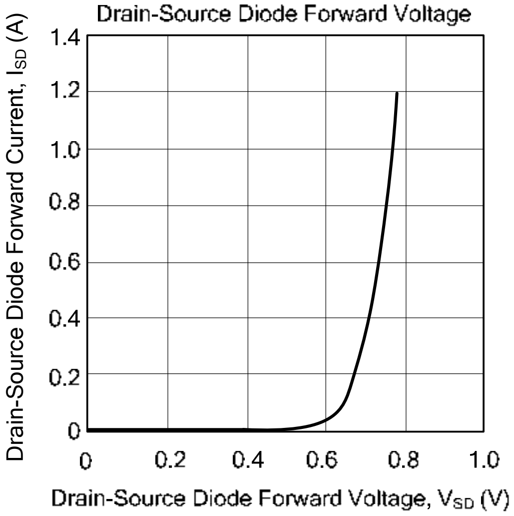
Drain Curren



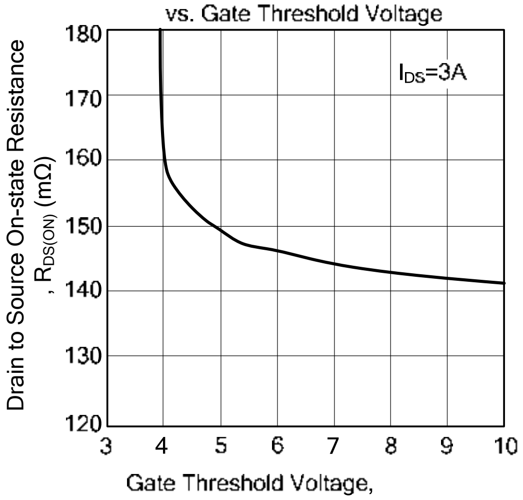
Drain-Source On-State Resistance Characteristics



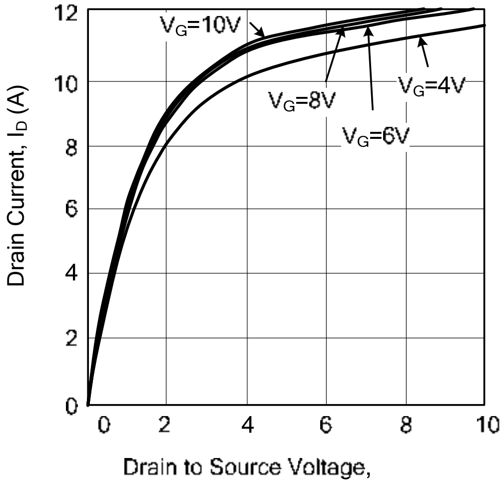
Drain-Source Diode Forward Current vs. Drain-Source Diode Forward Voltage



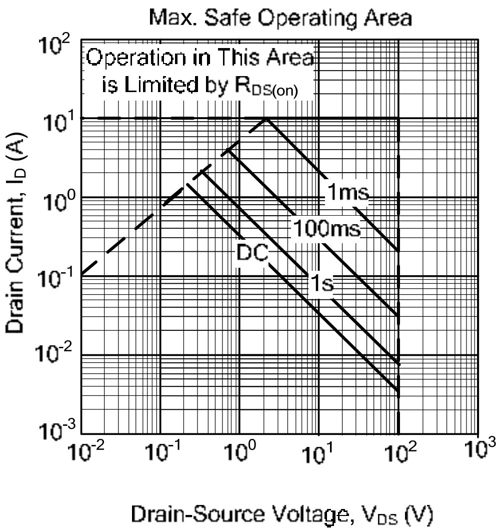
Drain to Source On-state Resistance vs. Gate Threshold Voltage



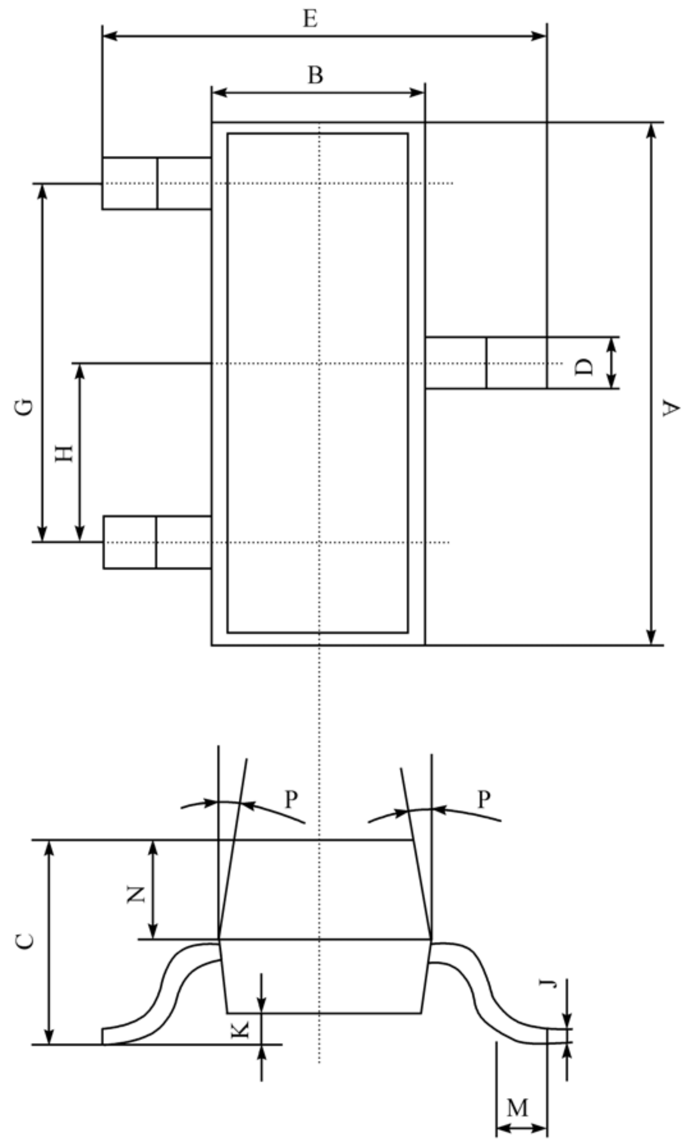
On□State Characteristics



■ TYPICAL CHARACTERISTICS(Cont.)



■SOT-23 PACKAGE OUTLINE DIMENSIONS



单位（UNIT）：mm

序号	数值及公差
A	2.90±0.10
B	1.30±0.10
C	1.00±0.10
D	0.40±0.10
E	2.40±0.20
G	1.90±0.10
H	0.95±0.05
J	0.13±0.05
K	0.00-0.10
M	⩾0.20
N	0.60±0.10
P	7±2°

Packing
SOT-23 包装规格
SMD片式表面贴封装
包装方式: 载带卷盘包装
Tape & Reel, 3Kpcs/Reel
每卷数量3000只（3Kpcs/Reel）
每盒数量45000只（45Kpcs/BOX）
每箱数量180000只（180Kpcs/Cartons）