

PRODUCT CHARACTERISTICS

VDSS	-20V
$R_{DS(on)}$ Typ(@ $V_{GS} = -4.5V$)	28m Ω
$R_{DS(on)}$ Typ(@ $V_{GS} = -2.5V$)	35m Ω
ID	-6A

APPLICATIONS

- Load switch for portable
- DC/DC converter

FEATURES

- * High Density Cell Design For Ultra Low On-Resistance
- * Advanced trench process technology

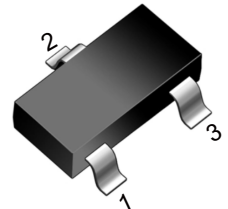
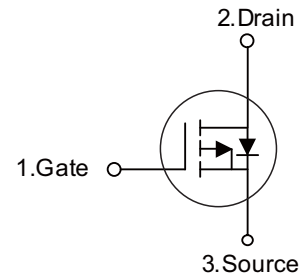
ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2305AB2	SOT-23	3000pieces/Reel

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

PARAMETER	SYMBOL	RATING	UNITS
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-6	A
Pulsed Drain Current	I_{DM}	-12	A
Power Dissipation	P_D	1.83	W
Junction to Ambient	θ_{JA}	150	$^{\circ}C/W$
Junction Temperature	T_J	+150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}C$

Symbol



■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Of characteristics						
Drain-Source Breakdown Voltage	B _V DSS	V _{GS} =0V, I _D =-250μA	-20	-	-	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V	-	-	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V	-	-	±100	nA
On characteristics						
Gate Threshold Voltage	V _{GS} (TH)	V _{DS} =V _{GS} , I _D =-250uA	-0.45	-	-1.2	V
Drain_Source On_State Resistance	R _{DS} (ON)	V _{GS} =-4.5V, I _D =-4.2A	-	28	45	mΩ
		V _{GS} =-2.5V, I _D =-3.4A	-	35	55	mΩ
Dynamic characteristics						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-20V, f=1MHz	-	932	-	pF
Output Capacitance	C _{OSS}		-	100	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	87	-	pF
Switching characteristics						
Total Gate Charge	Q _G	V _{DS} =-4V, V _{GS} =-4.5V, I _D =-3.5A	-	12.5	-	nC
Gate-Source Charge	Q _{GS}		-	2.5	-	nC
Gate-Drain Charge	Q _{GD}		-	1.8	-	nC
Turn-ON Delay Time	t _D (ON)	V _{DS} =-4V, V _{GS} =-4.5V, I _D =-1A, R _G =6Ω, R _D =4Ω	-	10	-	ns
Turn-ON Rise Time	t _R		-	39	-	ns
Turn-OFF Delay Time	t _D (OFF)		-	42	-	ns
Turn-OFF Fall Time	t _F		-	28	-	ns
Source-drain diode ratings and characteristics						
Maximum Continuous Forward Current	I _S		-	-	- 6	A
Maximum Pulsed Forward Current	I _{SM}		-	-	-12	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1.2A	-	-	-1.2	V

■ TYPICAL CHARACTERISTICS

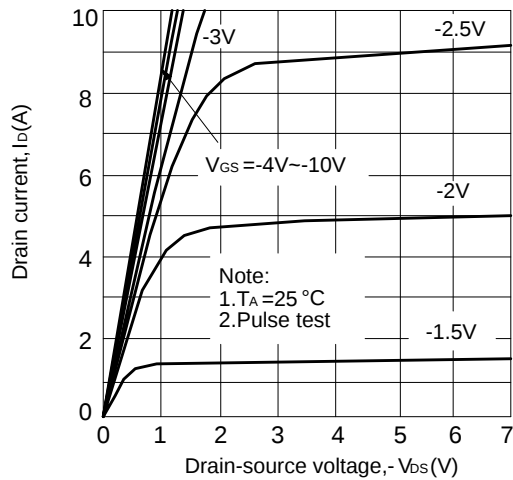


Figure 1: Drain current vs. drain-source voltage

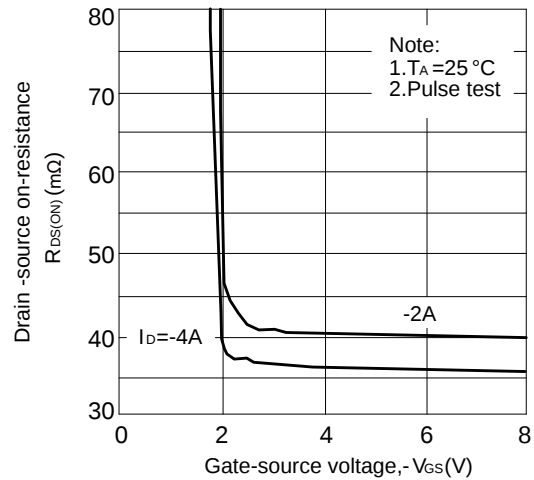


Figure 2: Drain-source on-resistance vs. gate-source voltage

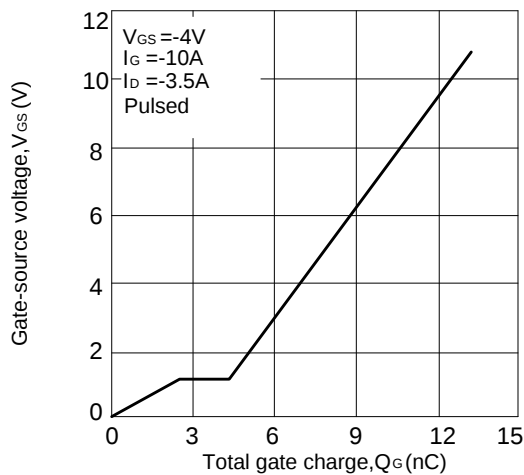


Figure 3: Gate charge characteristics

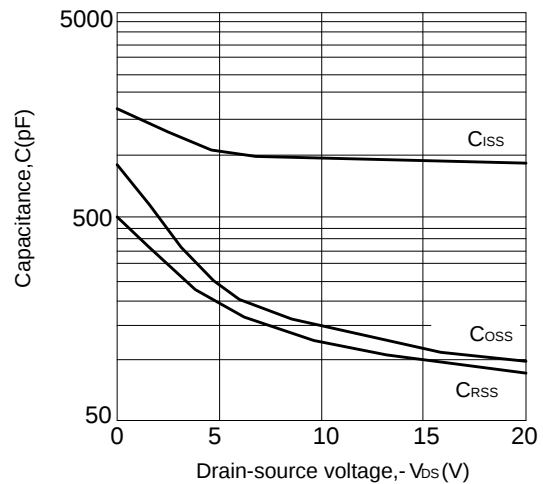


Figure 4: Capacitance characteristics

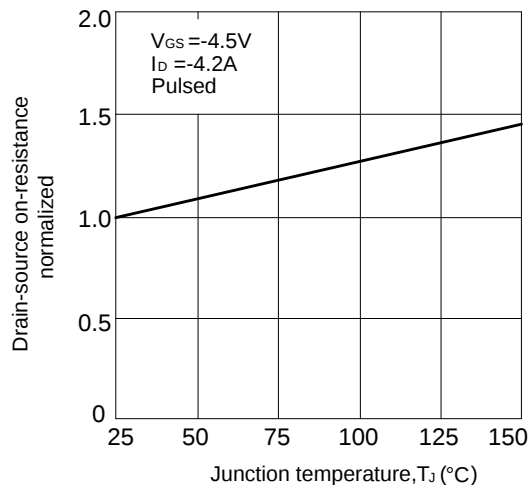


Figure 5: Drain-source on-resistance vs. junction temperature

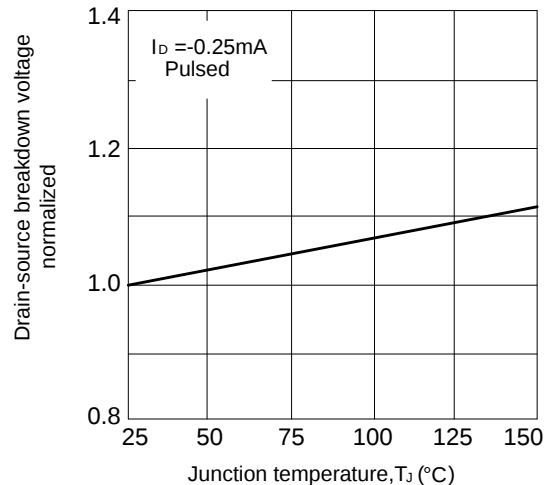


Figure 6: Breakdown voltage vs. junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

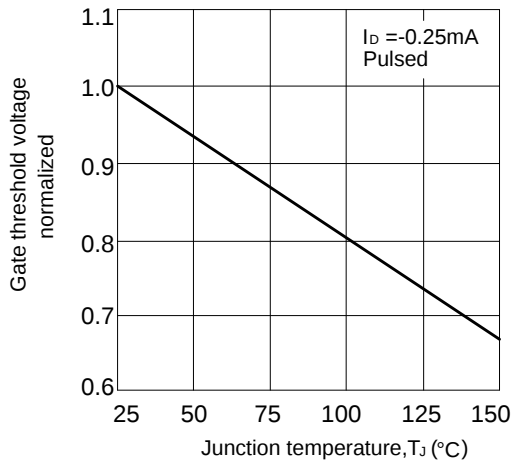


Figure 7: Gate threshold voltage vs. junction temperature

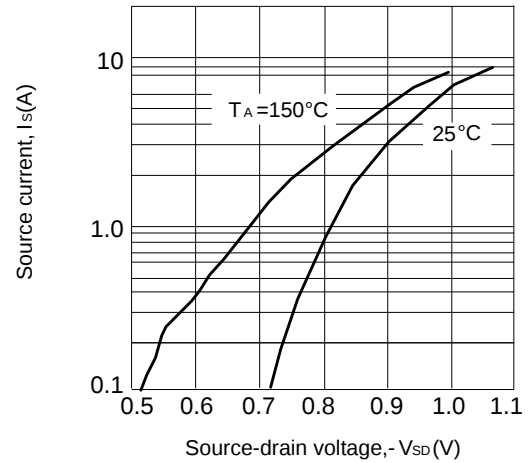


Figure 8: Source current vs. source-drain Voltage

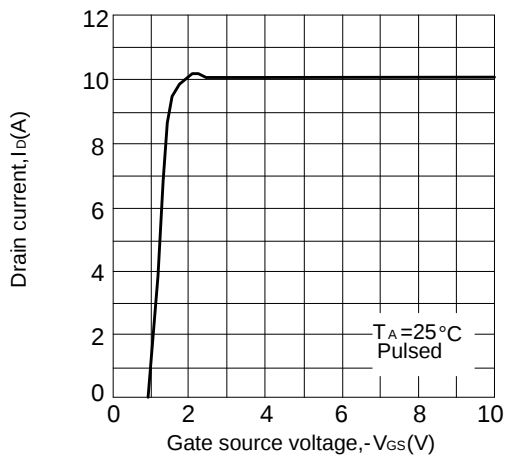


Figure 9: Drain current vs. gate-source voltage

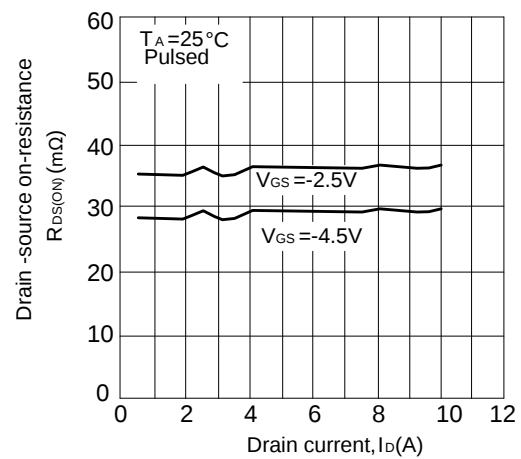


Figure 10: Drain-source on-resistance vs. drain current

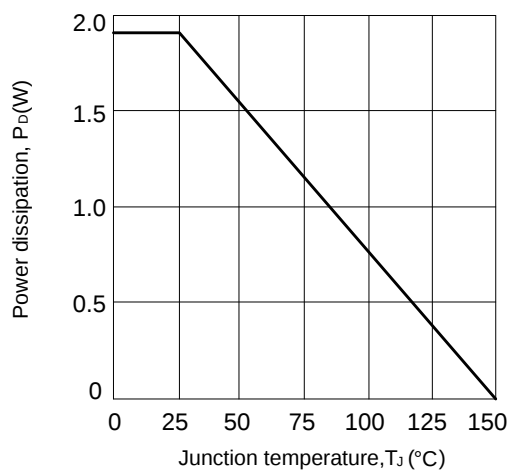


Figure 11: Power dissipation vs. junction temperature

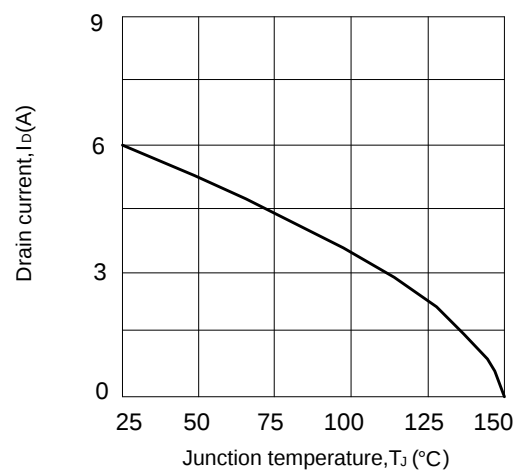
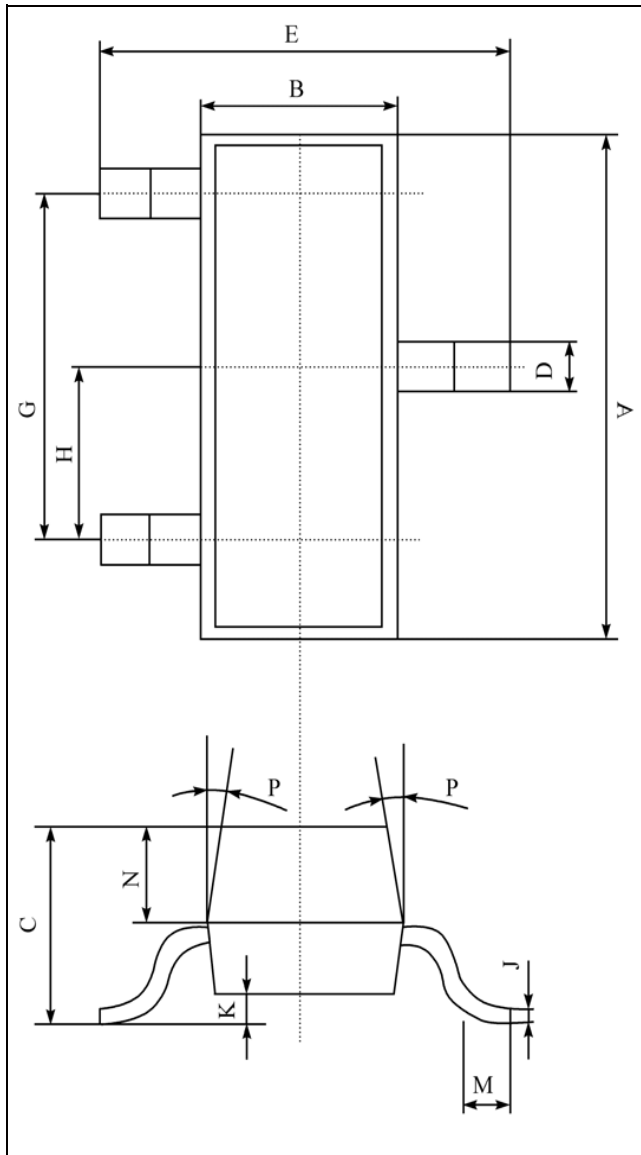


Figure 12: Drain current vs. junction temperature

■ 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)	