

■ PRODUCT CHARACTERISTICS

VDSS	100V
$R_{DS(on)}$ Typ(@V _{GS} =10V)	0.21Ω
$R_{DS(on)}$ Typ(@V _{GS} =4.5V)	0.26Ω
ID	2

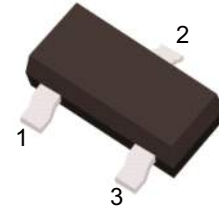
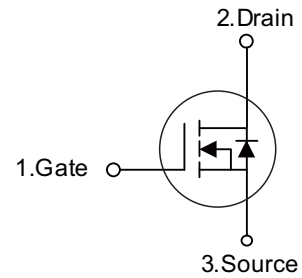
■ APPLICATIONS

Nanosecond Switching Speeds
Linear Transfer Characteristics

■ FEATURES

High dense cell design for extremely low $R_{DS(ON)}$
Exceptional on-resistance and maximum DC current capability

Symbol



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2N10	SOT-23	3000pieces/Real

■ 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
Drain Current	Continuous	I _D	2	A
	Pulsed	I _{DM}	4	A
Power Dissipation		P _D	0.5	W
Junction to Ambient		θ _{JA}	250	°C/W
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V$	-	-	± 100	nA
On characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	3.0	V
Drain to Source On-state Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=2.0A$	-	0.21	0.32	Ω
		$V_{GS}=4.5V, I_D=2.0A$	-	0.26	0.38	Ω
Dynamic characteristics						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$	-	285	-	pF
Output Capacitance	C_{OSS}		-	155	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	15	-	pF
Switching characteristics						
Total Gate Charge (Note)	Q_G	$V_{DS}=80V, V_{GS}=10V, I_D=2.0A$ $I_G=1mA$ (Note 1, 2)	-	13	-	nC
Gate Source Charge	Q_{GS}		-	3.5	-	nC
Gate Drain Charge	Q_{GD}		-	2	-	nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{DS}=50V, V_{GS}=10V, I_D=2.0A,$ $R_G=3\Omega$ (Note 1, 2)	-	3.2	-	ns
Turn-ON Rise Time	t_R		-	16	-	ns
Turn-OFF Delay Time	$t_{D(OFF)}$		-	9	-	ns
Turn-OFF Fall-Time	t_F		-	19.8	-	ns
Source-drain diode ratings and characteristics						
Maximum Continuous Forward Current	I_S		-	-	2	A
Maximum Pulsed Forward Current	I_{SM}		-	-	4	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=2.0A, V_{GS}=0V$	-	-	1.4	V
Body Diode Reverse Recovery Time	t_{rr}	$I_S=2.0A, V_{GS}=0V,$ $dI_F/dt=100A/\mu s$	-	28	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	23	-	nC

Notes: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

■ TYPICAL CHARACTERISTICS

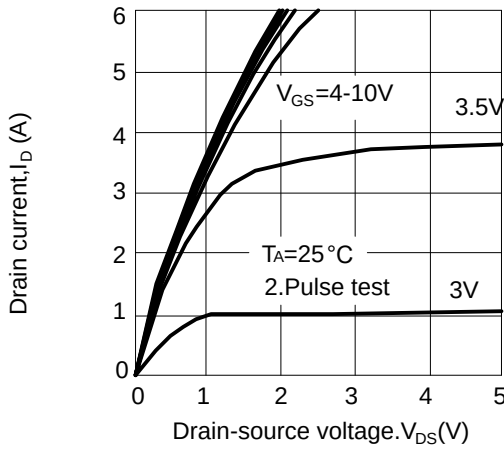


Figure 1: Drain current vs. drain-source voltage

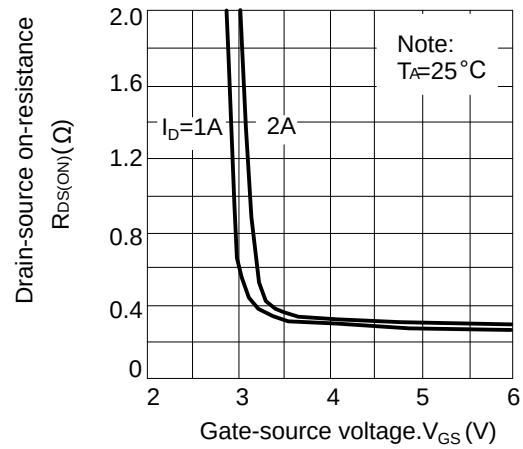


Figure 2: Drain-source on-resistance vs. gate source voltage

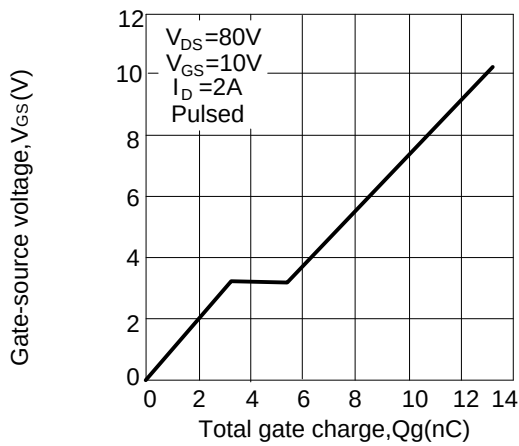


Figure 3: Gate charge characteristics

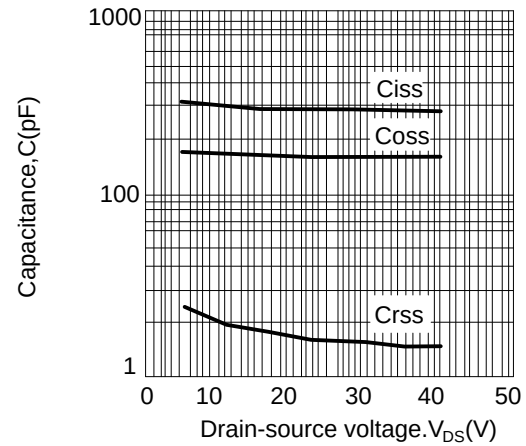


Figure 4: Capacitance characteristics

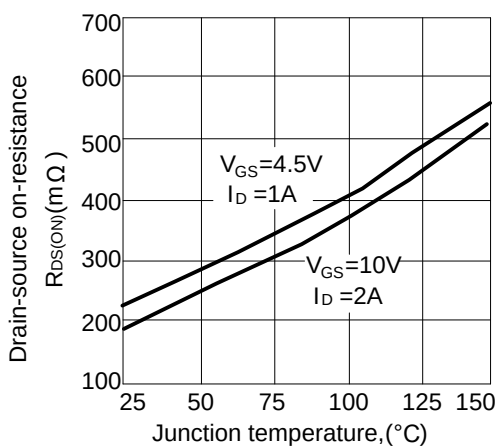


Figure 5: Drain-source on-resistance vs. junction temperature

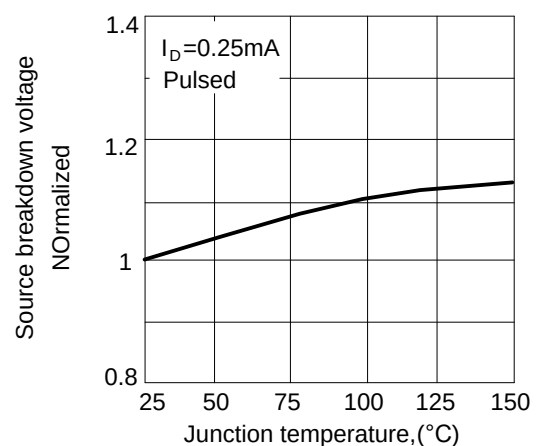


Figure 6: Breakdown voltage vs. junction temperature

■ TYPICAL CHARACTERISTICS(Cont.)

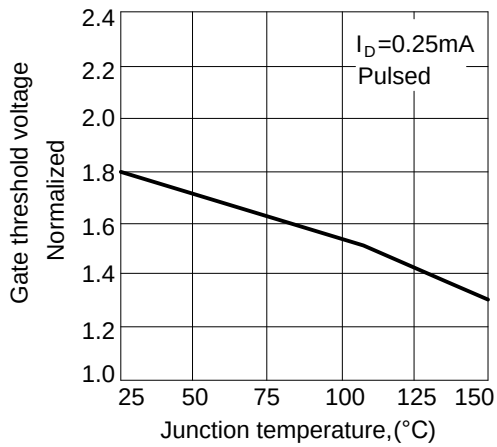


Figure 7: Gate threshold voltage vs. junction temperature

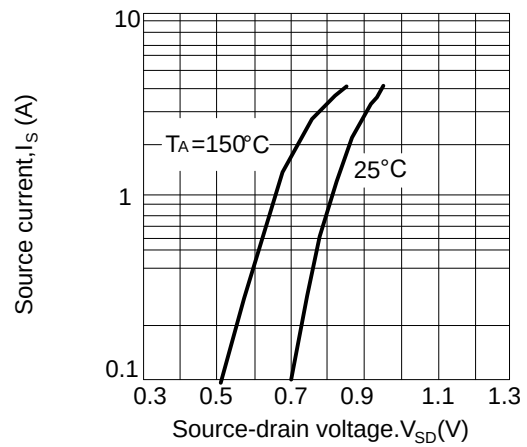


Figure 8: Source current vs. source-drain voltage

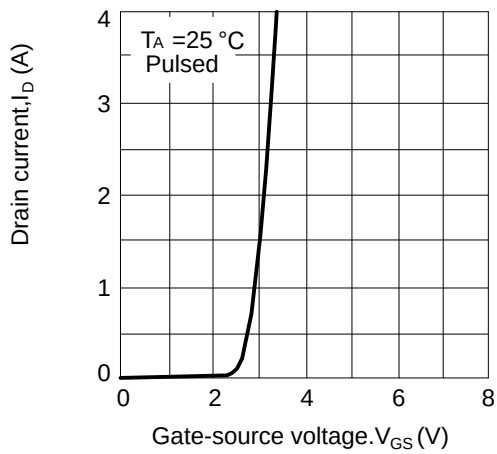


Figure 9: Drain current vs. case-source voltage

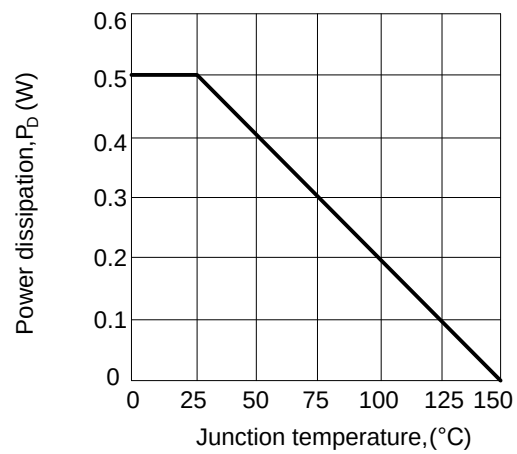


Figure 10: Power dissipation vs. junction temperature

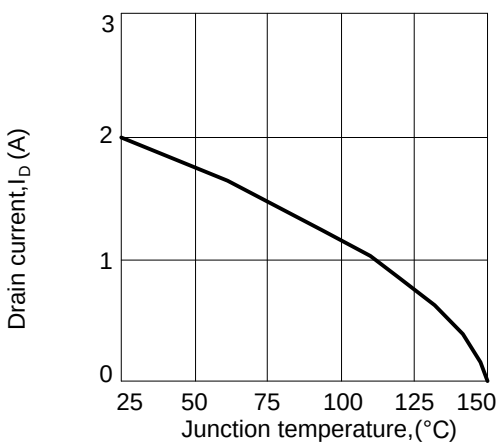
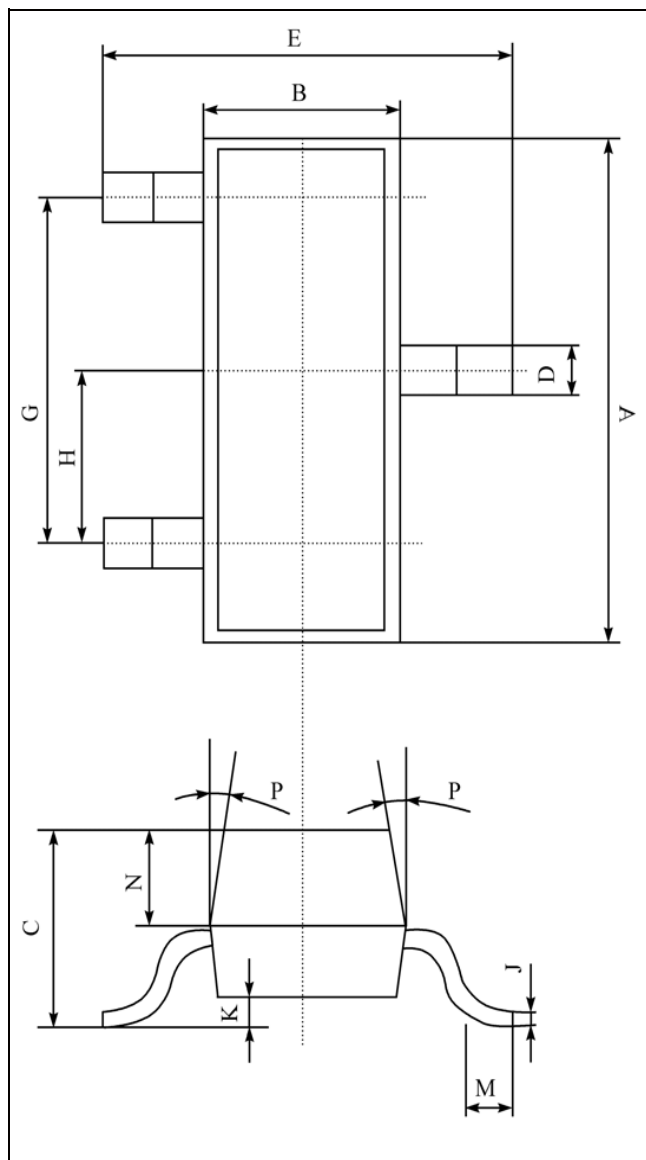


Figure 11: Drain current vs. junction temperature

■ SOT-23 PACKAGE OUTLINE DIMENSIONS

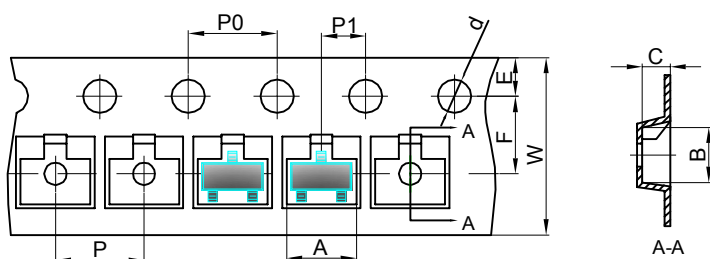


单位 (UNIT) : mm

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)	

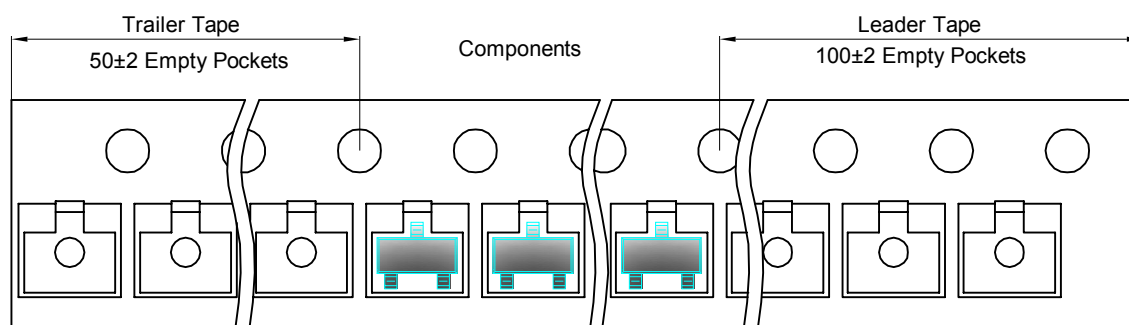
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

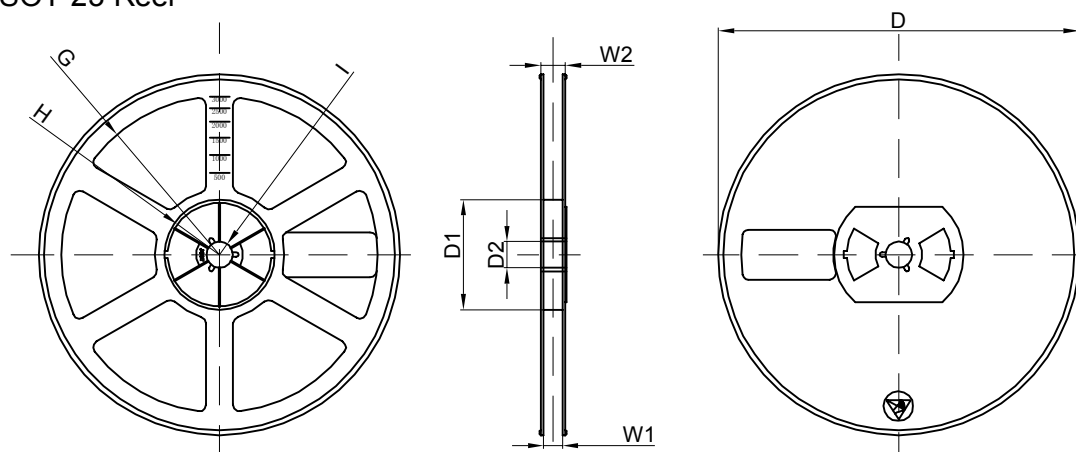


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	192×192×193	180,000 pcs	404×404×214	