Product Summary

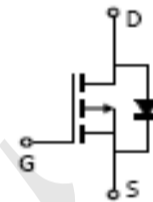|	
BV$_{DSS}$	20V
R$_{DS(ON)}$	52 mΩ
I$_D$	2.4A

Application

● Load/Power Switching
● Interfacing Switching
● Logic Level Shift

Package and Pin Configuration

SOT-23

Circuit diagram

Marking: 304P

Absolute Maximum Ratings (T$_A$=25°C unless otherwise noted)
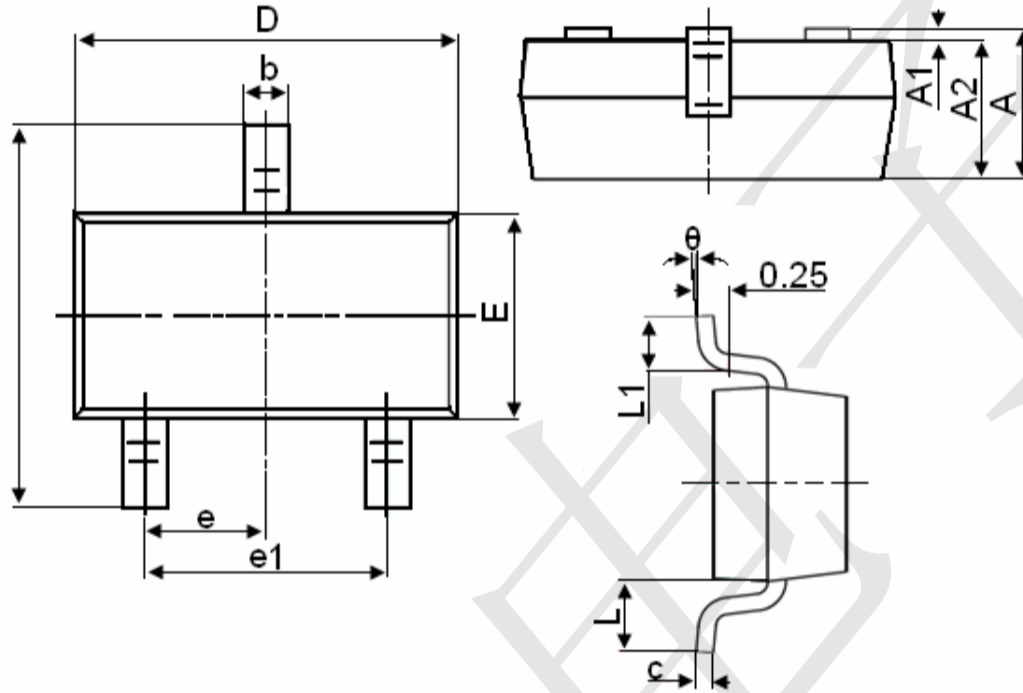
Symbol	Parameter		Max.	Units
V$_{DSS}$	Drain-Source Voltage		-20	V
V$_{GSS}$	Gate-Source Voltage		±8	V
I$_D$	Continuous Drain Current	T$_A$= 25℃	-2.4	A
I$_{DM}$	Pulsed Drain Current [note1]		-10	A
P$_D$	Power Dissipation	T$_A$= 25℃	1	W
R$_{θJA}$	Thermal Resistance, Junction to Ambient		125	℃/W
T$_J$, T$_{STG}$	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D= -250μA	-20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20V, V_{GS} = 0V,	-	-	-1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±8 V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= -250μA	-0.4	-0.7	-1.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =-4.5V, I_D =-2.5A	-		52	mΩ
		V_{GS} =-2.5V, I_D =-1.8A	-		70	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = -10V, V_{GS} = 0V, f = 1.0MHz	-	-	1248	pF
C_{oss}	Output Capacitance		-	-	244	pF
C_{rss}	Reverse Transfer Capacitance		-	-	31	pF
Q_g	Total Gate Charge	V_{DS} = -10V, I_D = -2.5A, V_{GS} = -4.5V	-	-	2.9	nC
Q_{gs}	Gate-Source Charge		-	-	0.45	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	-	0.75	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = -10V, R_L=5Ω, R_{GEN}=3Ω,V_{GS}=-4.5V,	-	9.8	-	ns
t_r	Turn-on Rise Time		-	4.9	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	20.5	-	ns
t_f	Turn-off Fall Time		-	7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-2.4	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-10	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S = -2.5A	-	-	-1.2	V

SOT-23 Package Information

Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

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