TECH PUBLIC
台舟电子

XP152A12C0MR

20V P-Channel Mosfets

www.sot23.com.tw

Product Summary

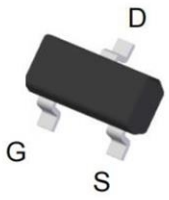
* $V_{DS(on)}$= -20V
* ID = -3A
* $R_{DS(on)}$= 90m Ω@V_{GS}= 4.5V (Max)
* $R_{DS(on)}$= 125m Ω@V_{GS}= 2.5V (Max)
* ESD protection

Application

* Load/Power switch
* Interfacing, logic switching
* Battery management for ultra protable electronics

Package and Pin Configuration

SOT23



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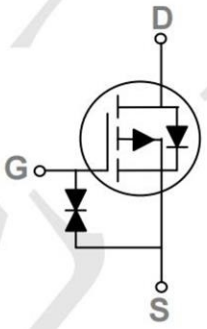
Circuit diagram



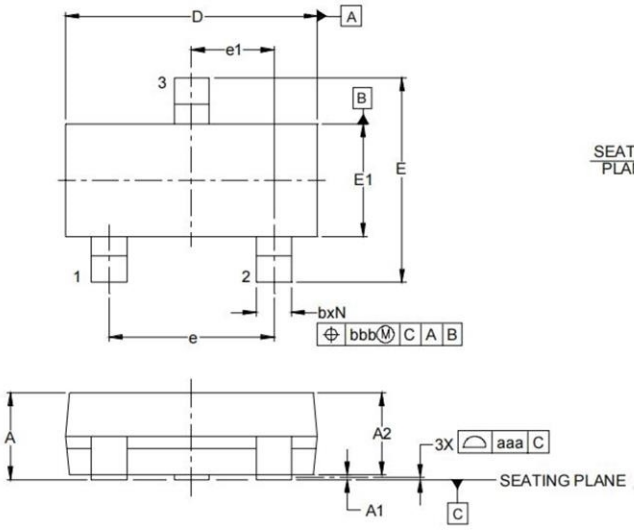
Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

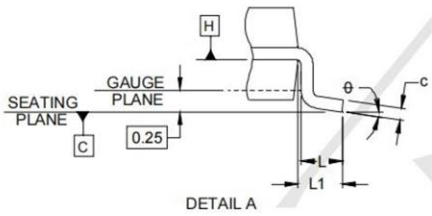
Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-20	V
Typical gate-source voltage	V_{GS}	±10	V
Continuous drain current (note 1)	I_D	-3	A
Pulsed drain current	I_{DM}	-13.2	A
Power dissipation (note 2)	P_D	1.55	W
Thermal resistance from junction to ambient (note 1)	$R_{\theta JA}$	80	°C/W
Junction temperature range	T_J	150	°C
Storage temperature range	T_{STG}	-55 ~ +150	°C
Lead temperature for soldering purposes (1/8" from case for 10s)	T_L	260	°C

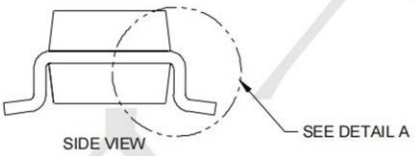
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V , I_D = -250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} = -20V , V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} = ±10V , V_{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D = -250μA	-0.35		-1.1	V
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} = -4.5V , I_D = -3A		75	90	mΩ
		V_{GS} = -2.5V , I_D = -2A		100	125	
		V_{GS} = -1.8V , I_D = -1A		135	180	
Forward tranconductance (note 2)	g_{FS}	V_{DS} = -10V , I_D = -1A		2.2		S
Diode forward voltage	V_{SD}	I_S = -1A , V_{GS} = 0V			-1.2	V
DYNAMIC PARAMETERS (note 4)						
Input capacitance	C_{iss}	V_{DS} = -16V , V_{GS} = 0V, f = 1MHz		365	520	pF
Output capacitance	C_{oss}			75	101	
Reverse transfer capacitance	C_{rss}			50	80	
SWITCHING PARAMETERS (note 4)						
Turn-on delay time (note 3)	$t_{d(on)}$	V_{GS} = -4.5V , V_{DS} = -10V , I_D = -1000mA , R_{GEN} = 25Ω			9	ns
Turn-on rise time (note 3)	t_r				25	
Turn-off delay time (note 3)	$t_{d(off)}$				65	
Turn-off fall time (note 3)	t_f				17	

SOT23 - Package Outline Drawing

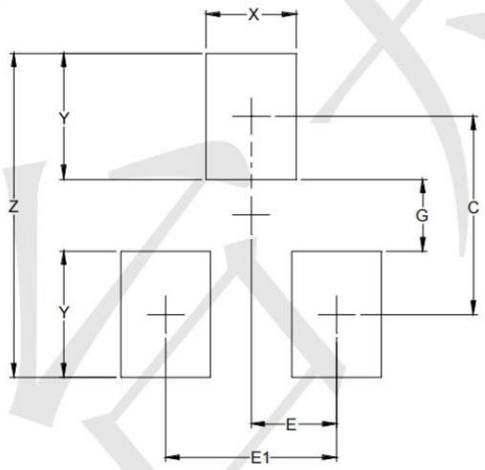






DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.035	-	.044	0.89	-	1.12
A1	.000	-	.004	0.01	-	0.10
A2	.035	.037	.040	0.88	0.95	1.02
b	.012	-	.020	0.30	-	0.51
c	.003	-	.007	0.08	-	0.18
D	.110	.114	.120	2.80	2.90	3.04
E	.082	.093	.104	2.10	2.37	2.64
E1	.047	.051	.055	1.20	1.30	1.40
e	.075			1.90 BSC		
e1	.037			0.95 BSC		
L	.015	.020	.024	0.40	0.50	0.60
L1	.022			(0.55)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		

Suggested Land Pattern



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60