

AP2318A

N-Channel Power MOSFET

Description

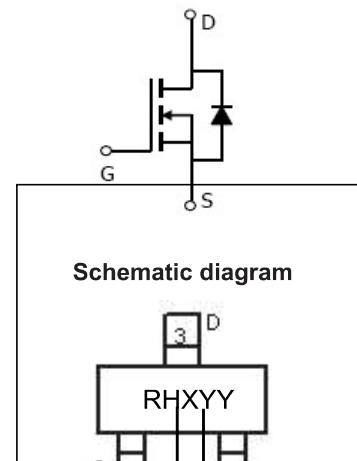
The AP2318A uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

General Features

- $V_{DS}(V) = 20V$ $I_D = 6.0A$
- $R_{DS(ON)} < 12m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 16m\Omega$ ($V_{GS} = 2.5V$)
- High power and current handing capability
- Lead free product is acquired
- Surface mount package

Application

- PWM applications
- Load switch
- Power management
- Halogen-free



X:Year Code(0-9)

YY:Week Code(01-52)

Marking and pin assignment



SOT-23-3 top view

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
RHXXX	AP2318A	SOT-23-3	Ø180mm	8 mm	3000 units

Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D (t=5s)	6	A
Pulsed Drain Current	I_{DM}	24	
Continuous Source-Drain Diode Current	I_S	1.64	W
Maximum Power Dissipation	P_D (t=5s)	1.25	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	-	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-50 ~ +150	

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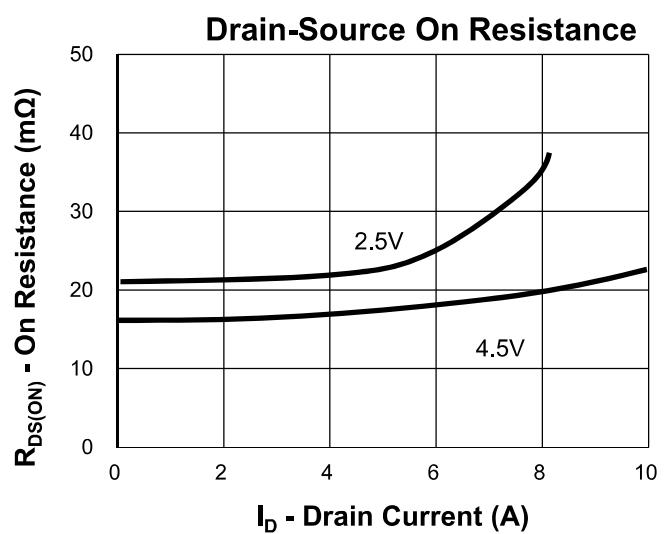
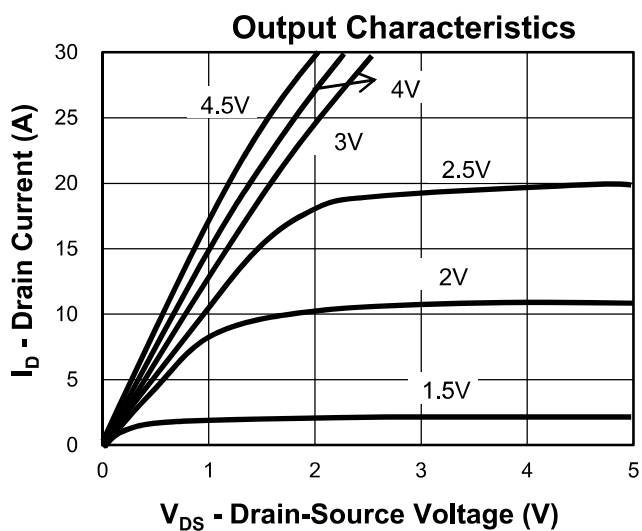
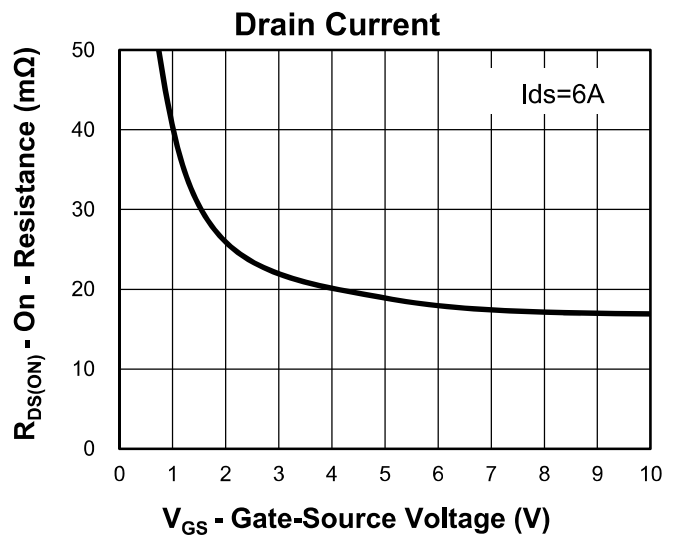
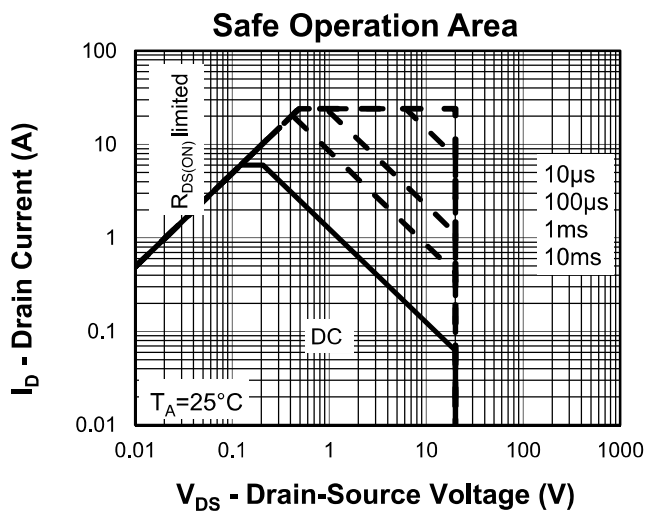
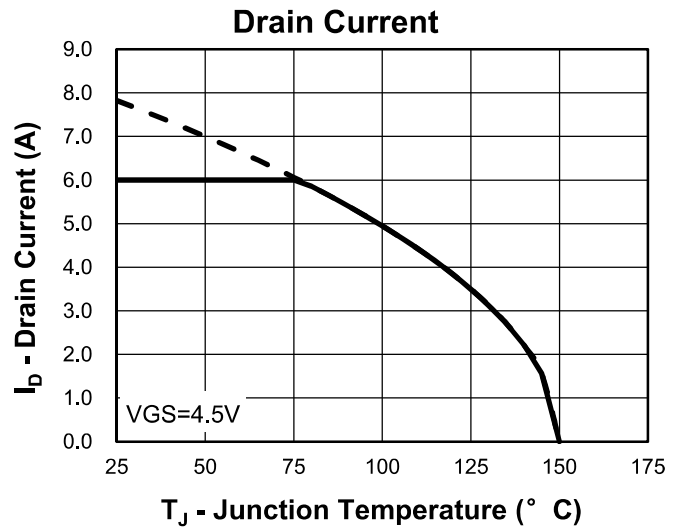
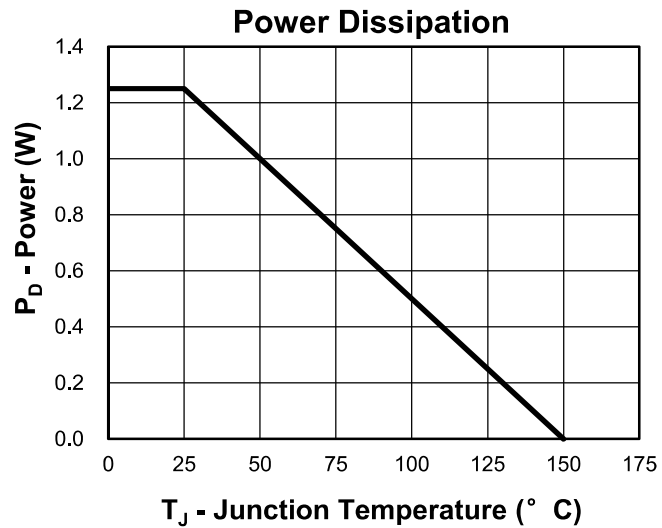
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate-source leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 10V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1.0	μA
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.0	V
Drain-source on-state resistance ^a	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 6.0A$		0.010	0.0130	Ω
		$V_{GS} = 2.5V, I_D = 4.7A$		0.013	0.0180	
Forward transconductance ^a	g_{fs}	$V_{DS} = 10V, I_D = 6.0A$		6		S
Dynamic^b						
Input capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		565		pF
Output capacitance	C_{oss}			125		
Reverse transfer capacitance	C_{rss}			85		
Gate resistance	R_g	$f = 1MHz$	0.5		4.8	Ω
Turn-on delay Time	$t_{d(on)}$	$V_{GEN} = 5V, V_{DD} = 10V,$ $I_D = 4A, R_G = 1\Omega, R_L = 2.2\Omega$		8	16	ns
Rise time	t_r			15	30	
Turn-off Delay time	$t_{d(off)}$			33	66	
Fall time	t_f			13	26	
Drain-source body diode characteristics						
Forward diode voltage	V_{SD}	$V_{GS} = 0V, I_S = 4A$		0.75	1.2	V

Notes :

- Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- These parameters have no way to verify.

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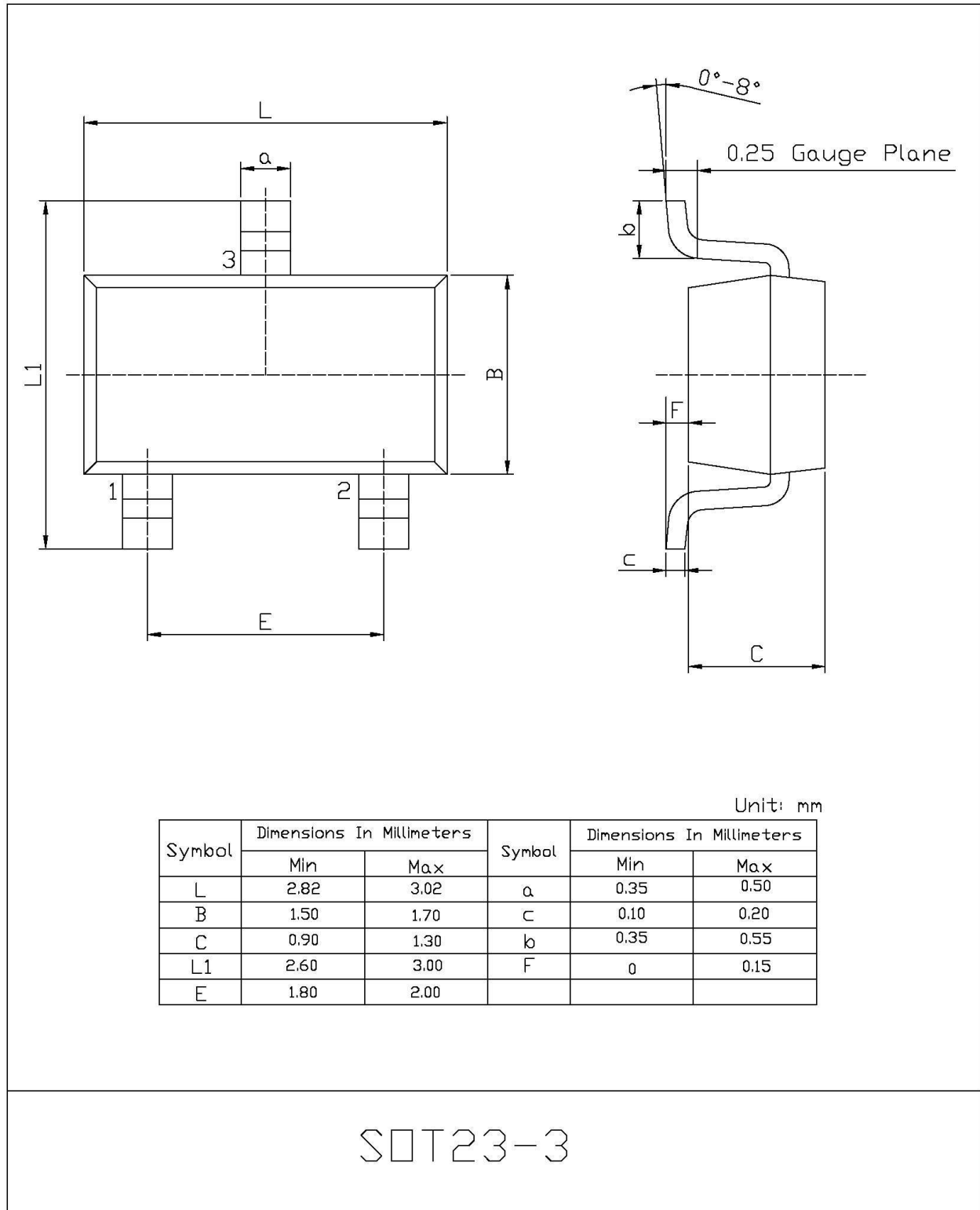
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SOT-23-3 Package Outline Dimensions



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