ST2341A

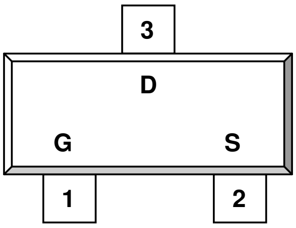
P Channel Enhancement Mode MOSFET

-6.0A

DESCRIPTION

ST2341A is the P-Channel logic enhancement mode power field effect transistor which is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management, other battery powered circuits, and low in-line power loss are required. The product is in a very small outline surface mount package.

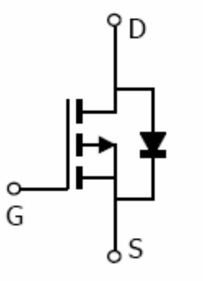
PIN CONFIGURATION
SOT-23-3L



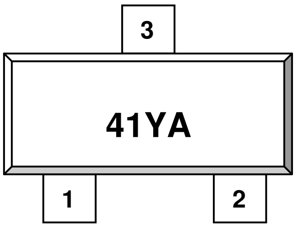
1.Gate 2.Source 3.Drain

FEATURE

- -30V/-6.0A, $R_{DS(ON)}$ = 20m-ohm (Typ.) @VGS = -10V
- -30V/-3.8A, $R_{DS(ON)}$ = 28m-ohm @VGS = -4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design



PART MARKING
SOT-23-3L



Y: Year Code A: Process Code

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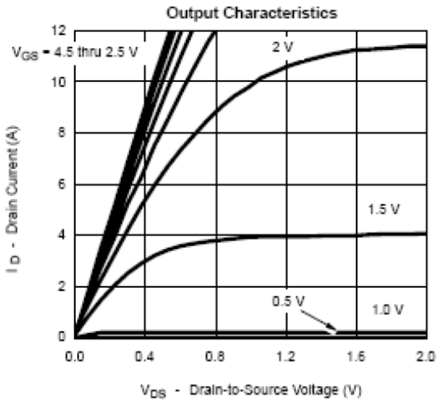
ABSOULTE MAXIMUM RATINGS (Ta = 25℃ Unless otherwise noted)

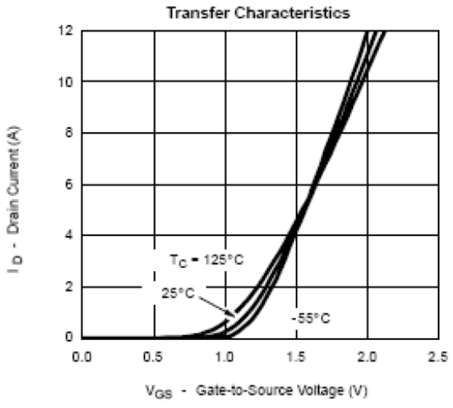
Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain CurrentTJ=150℃)	T_A=25℃ T_A=70℃	I_D	-6.0 -4.5	A
Pulsed Drain Current		I_{DM}	-30	A
Continuous Source Current (Diode Conduction)		I_S	-1.0	A
Power Dissipation	T_A=25℃ T_A=70℃	P_D	1.25 0.80	W
Operation Junction Temperature		T_J	150	℃
Storgae Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	140	℃/W

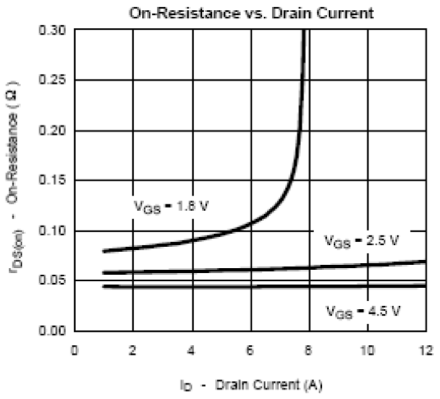
ELECTRICAL CHARACTERISTICS (Ta = 25℃ Unless otherwise noted)

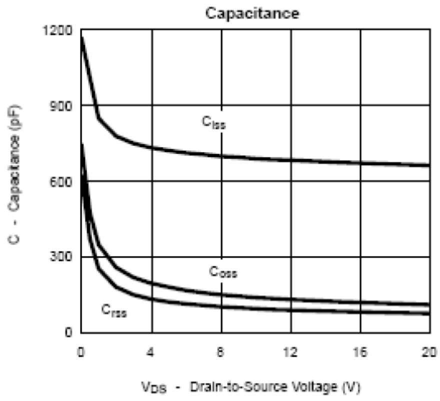
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=-250uA	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS,I_D=-250uA	-1.0		-3.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V			-1	uA
		V_{DS}=-20V,V_{GS}=0V T_J=55℃			-10	
On-State Drain Current	$I_{D(on)}$	V_{DS}≦-5V,V_{GS}=-4.5V	-6			A
Drain-source On-Resistance	$R_{DS(on)}$	V_{GS}=-10,I_D=-6.0A V_{GS}=-4.5V,I_D=-3.8A		0.025 0.035	0.030 0.042	
Forward Transconductance	g_{fs}	V_{DS}=-5V,I_D=-4V		3.0		S
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-6V V_{GS}=-4.5V I_D≡-3.3A		8.0	13	nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			2.2		
Input Capacitance	C_{iss}	V_{DS}=-6.0V V_{GS}=0V F=1MHz		700		pF
Output Capacitance	C_{oss}			160		
Reverse Transfer Capacitance	C_{rss}			120		
Turn-On Time	$t_{d(on)}$	V_{DD}=-6V R_L=6Ω I_D=-1.0A V_{GEN}=-4.5V R_G=6Ω		15	25	nS
	t_r			35	55	
Turn-Off Time	$t_{d(off)}$			60	90	
	t_f			40	40	

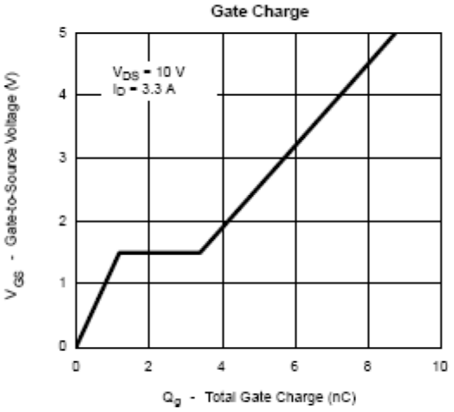
TYPICAL CHARACTERICTICS (25℃ Unless noted)

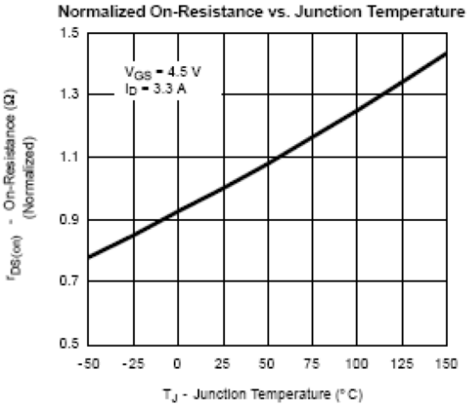

Output Characteristics


Transfer Characteristics

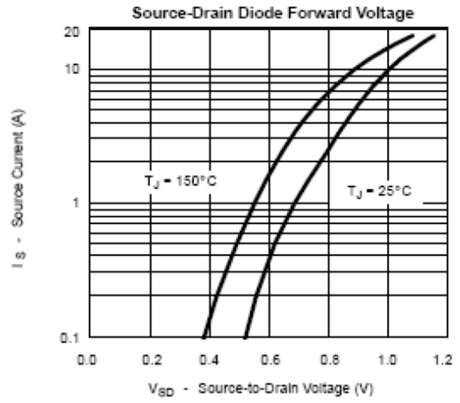

On-Resistance vs. Drain Current

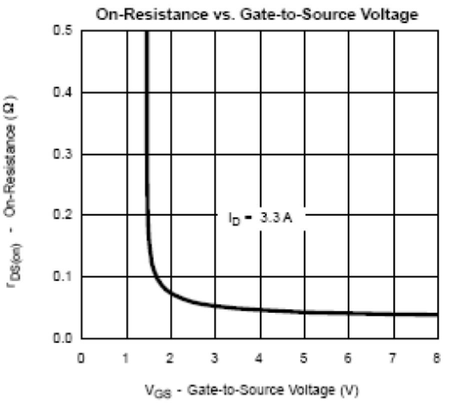

Capacitance

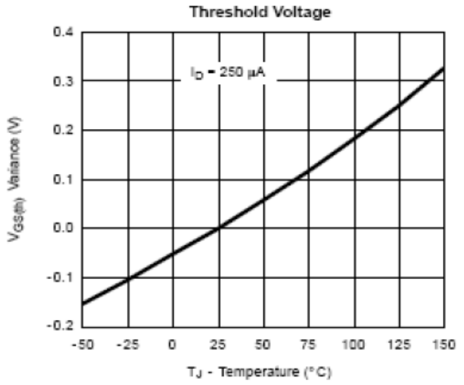

Gate Charge

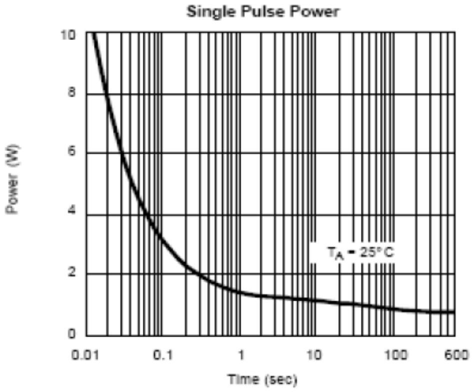

Normalized On-Resistance vs. Junction Temperature

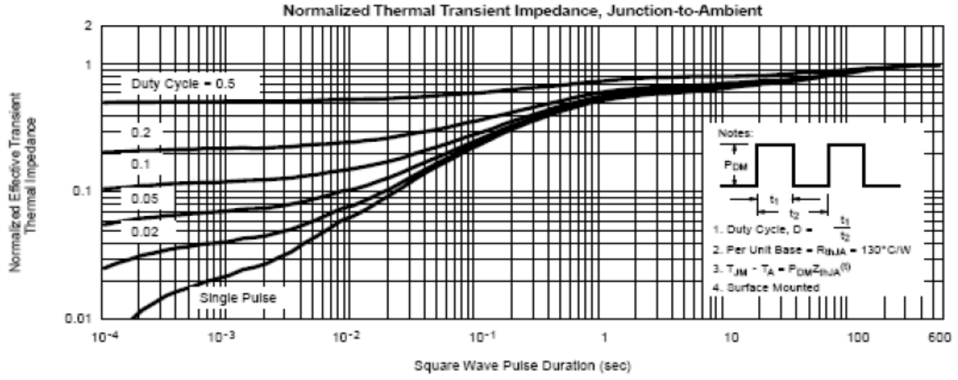
TYPICAL CHARACTERICTICS (25℃ Unless noted)



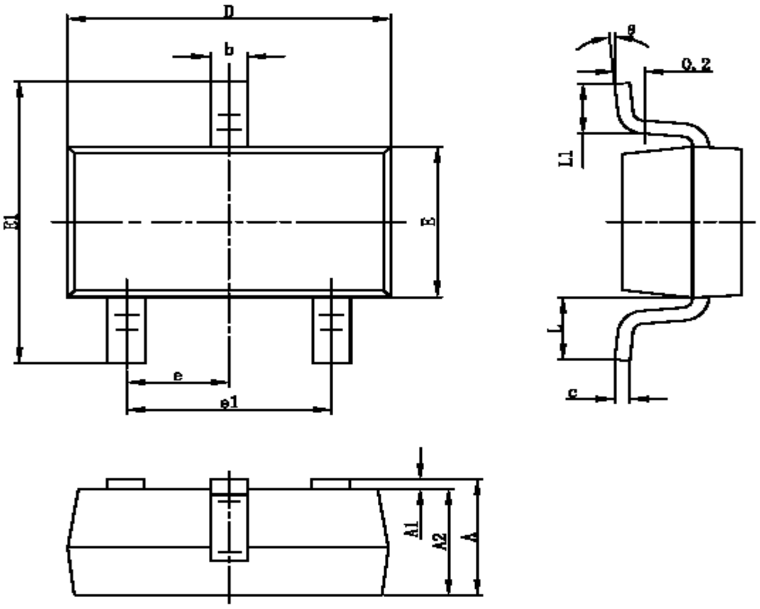








SOT-23-3L PACKAGE OUTLINE



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°