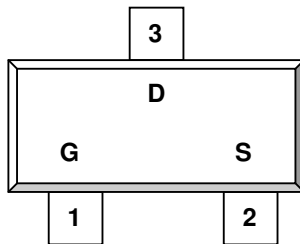


DESCRIPTION

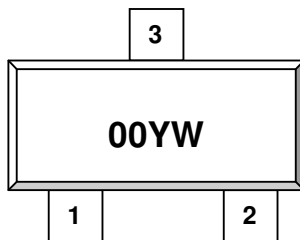
ST7400 is the N-Channel logic enhancement mode power field effect transistor which is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular 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-323 (SC-70)**


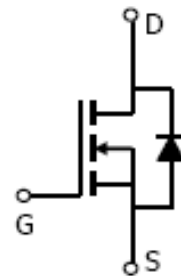
1.Gate 2.Source 3.Drain

FEATURE

- 30V/2.8A, $R_{DS(ON)} = 77m\Omega$
@ $V_{GS} = 10V$
- 30V/2.5A, $R_{DS(ON)} = 85m\Omega$
@ $V_{GS} = 4.5V$
- 30V/1.5A, $R_{DS(ON)} = 170m\Omega$
@ $V_{GS} = 2.5V$
- Super high density cell design for
Extremely low $R_{DS(ON)}$
- Exceptional on-resistance and
maximum DC current capability
- SOT-323 (SC-70) package design

**PART MARKING
SOT-323**


Y: Year Code A: Process Code





ST7400 

N Channel Enhancement Mode MOSFET

2.8A

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±12	V
Continuous Drain Current (T _J =150°C)	I _D	T _A =25°C 2.8	A
		T _A =70°C 2.3	
Pulsed Drain Current	I _{DM}	10	A
Continuous Source Current (Diode Conduction)	I _S	1.25	A
Power Dissipation	P _D	T _A =25°C 0.33	W
		T _A =70°C 0.21	
Operation Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	100	°C/W



ST7400 

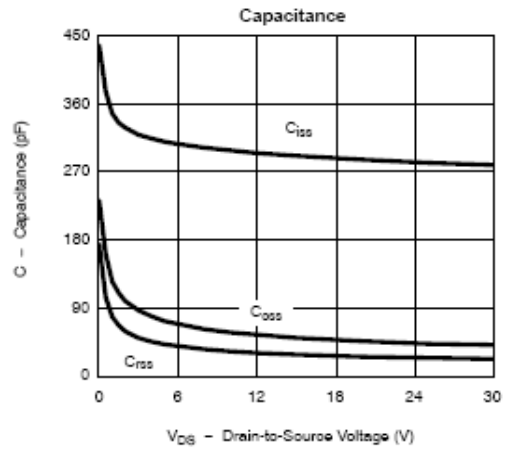
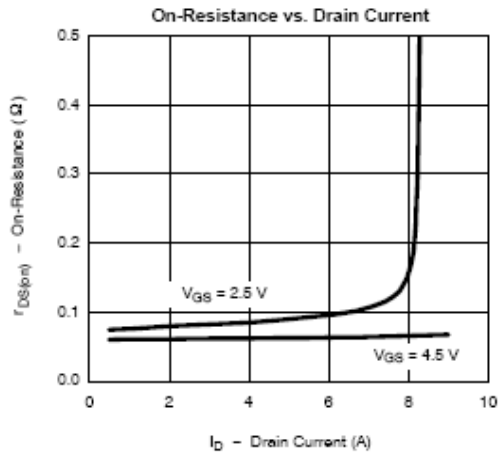
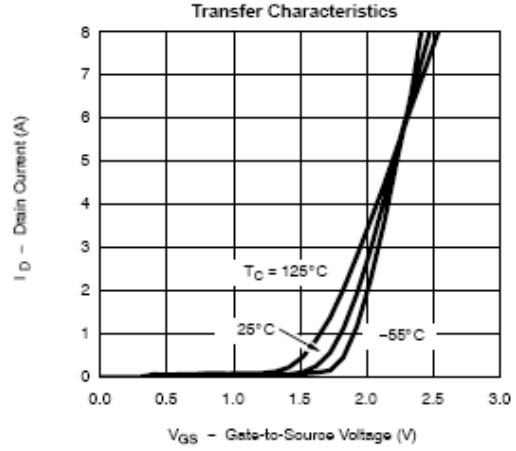
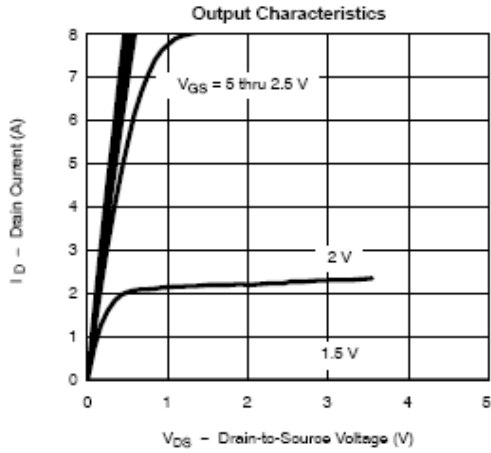
N Channel Enhancement Mode MOSFET

2.8A

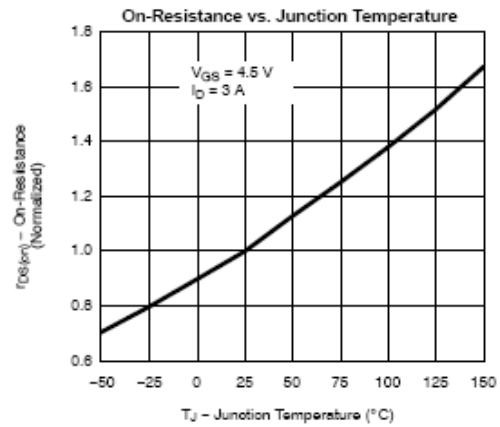
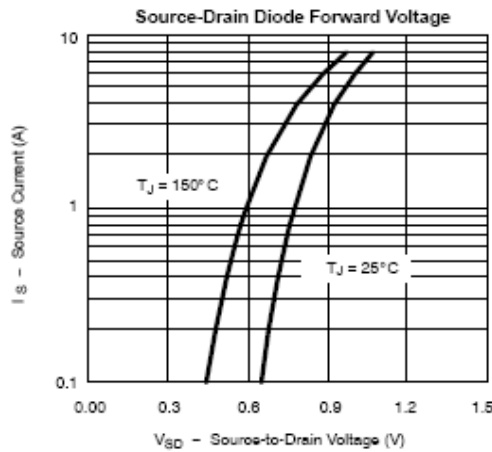
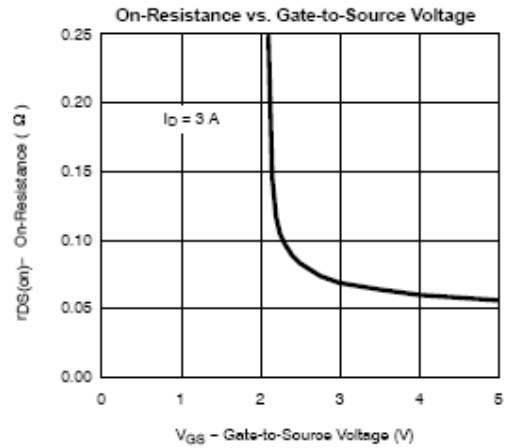
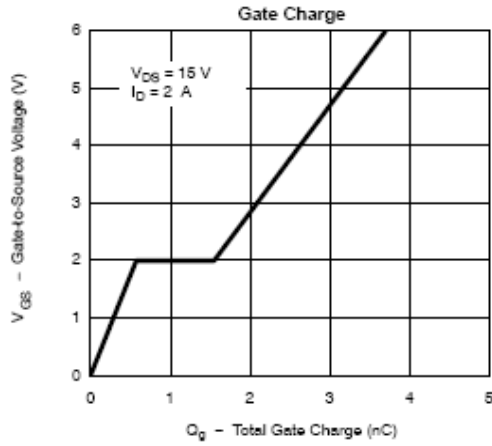
ELECTRICAL CHARACTERISTICS (Ta = 25°C Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.8		1.6	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	uA
		$V_{DS}=24V, V_{GS}=0V$ $T_J=85^\circ C$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -5V, V_{GS}=-4.5V$	4.0			A
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.8A$		62	77	mΩ
		$V_{GS}=4.5V, I_D=2.3A$		70	85	
		$V_{GS}=2.5V, I_D=1.5A$		95	110	
Forward Transconductance	g_{fs}	$V_{DS}=5V, I_D=4.0V$		4		S
Diode Forward Voltage	V_{SD}	$I_S=1.0A, V_{GS}=0V$		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=15V$ $V_{GS}=4.5V$ $I_D=2.0A$		4.2		nC
Gate-Source Charge	Q_{gs}			0.6		
Gate-Drain Charge	Q_{gd}			1.5		
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $F=1MHz$		380		pF
Output Capacitance	C_{oss}			55		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Time	$t_{d(on)}$ t_r	$V_{DS}=15V$ $I_D=1A$ $R_L=15\Omega$ $R_G=3\Omega$ $V_{GEN}=10V$		2.5		nS
Turn-Off Time	$t_{d(off)}$ t_f			2.5		
				20		
				5		

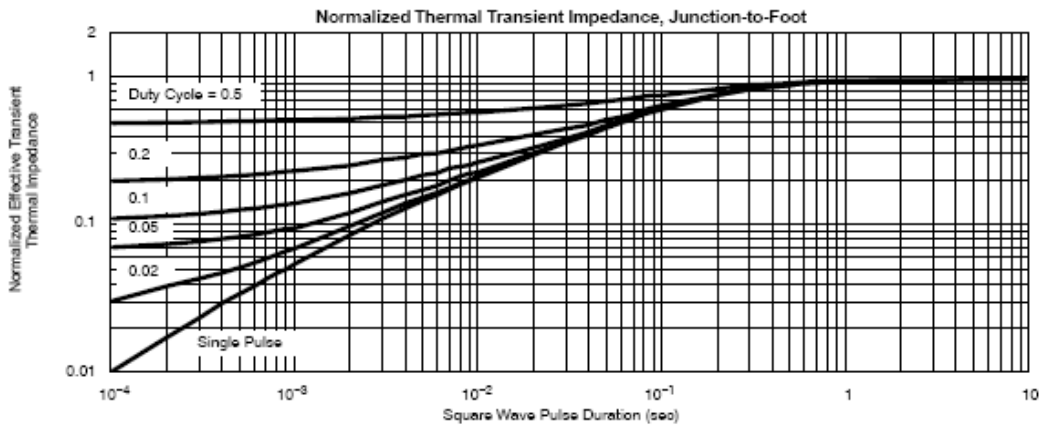
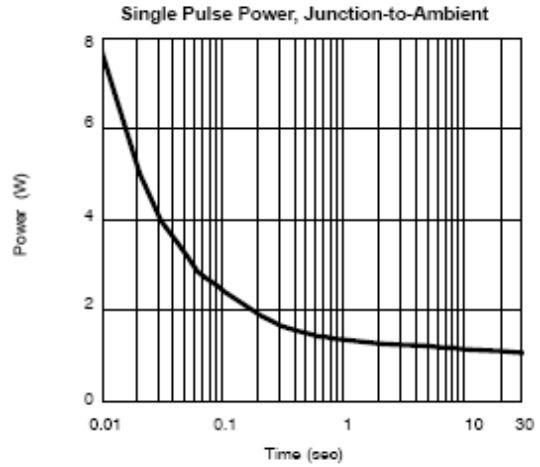
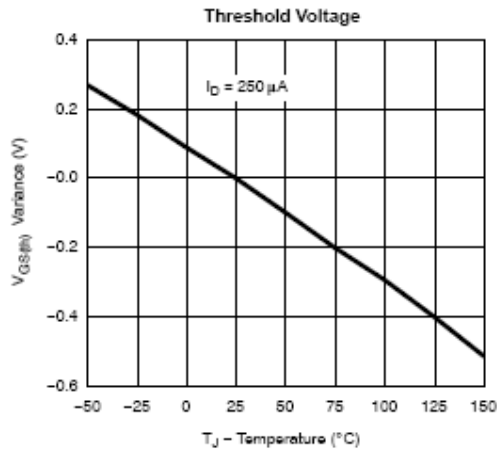
TYPICAL CHARACTERISTICS

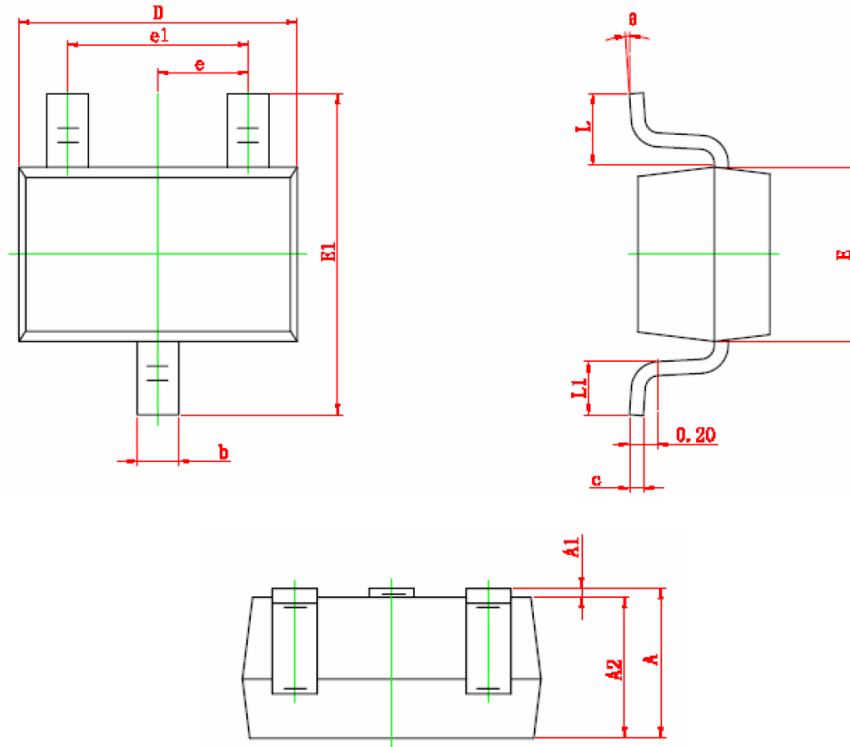


YPICAL CHARACTERICTICS



YPICAL CHARACTERICTICS



SOT-323 PACKAGE OUTLINE


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



ST7400 
N Channel Enhancement Mode MOSFET

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