



20V N-MOS

● Features

- $R_{DS(ON)} < 360m\Omega @ V_{GS} = 4.5V$
- $R_{DS(ON)} < 420m\Omega @ V_{GS} = 2.5V$
- $R_{DS(ON)} < 560m\Omega @ V_{GS} = 1.8V$
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- SOT-723 package design

● APPLICATIONS

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

● General Description

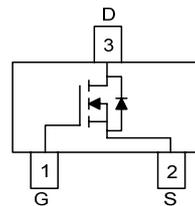
FS7072, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

● Pin Configurations



SOT-723



Pin configuration (Top view)

● Absolute Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain - Source Voltage	V_{DSS}	20	V
Gate -Source Voltage	V_{GS}	± 12	V
Drain Current (Continuous)	I_D	0.70	A
Drain Current (Pulse)	I_{DP}	1.0	A
Power Dissipation	P_D	0.27	W
Operating Temperature	T_J	-55~150	$^\circ C$
Storage Temperature	T_{STG}	-55~150	$^\circ C$



● Electrical Characteristics @T_A=25°C unless otherwise noted

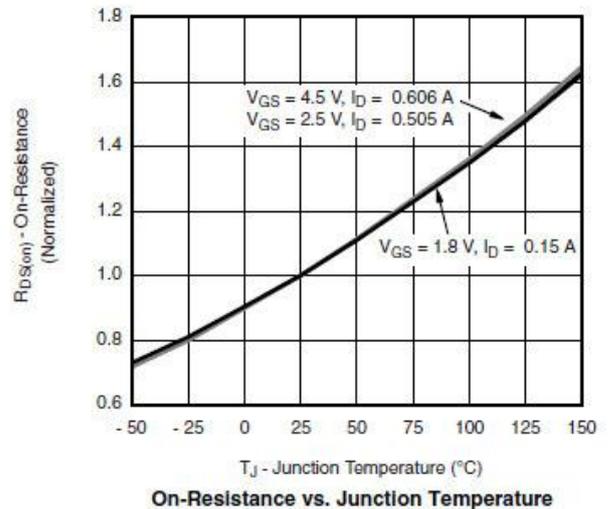
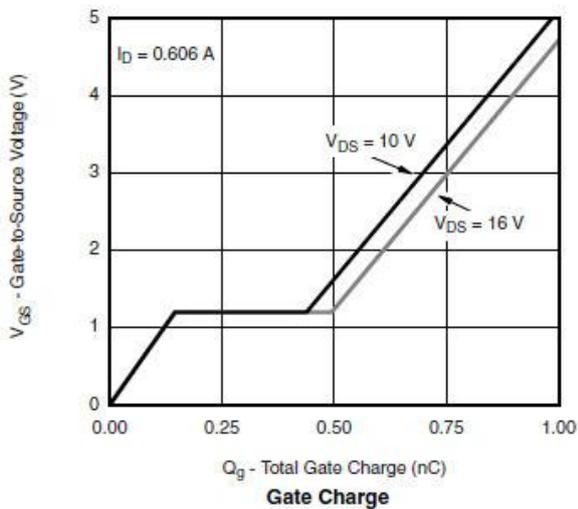
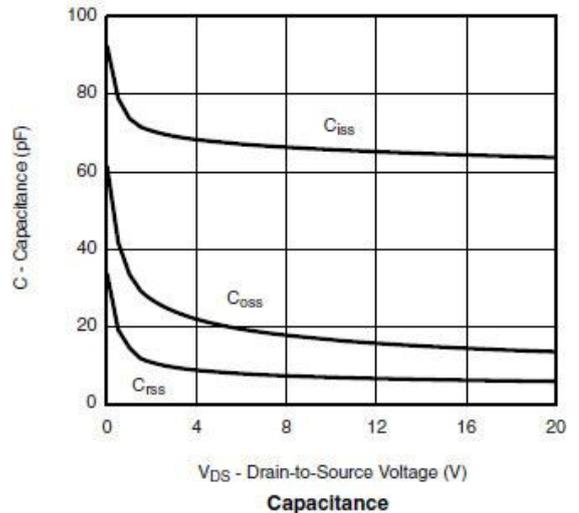
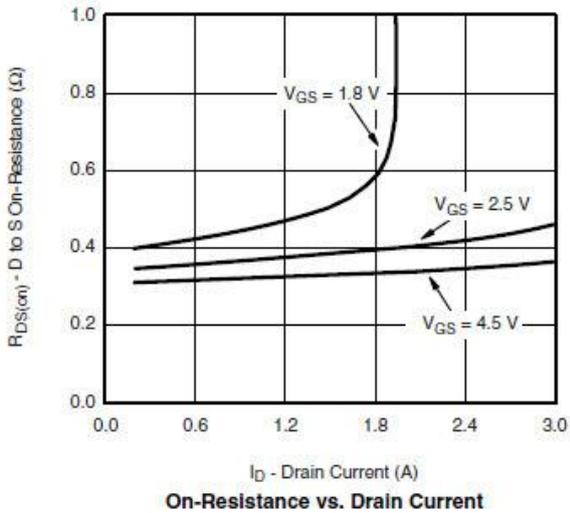
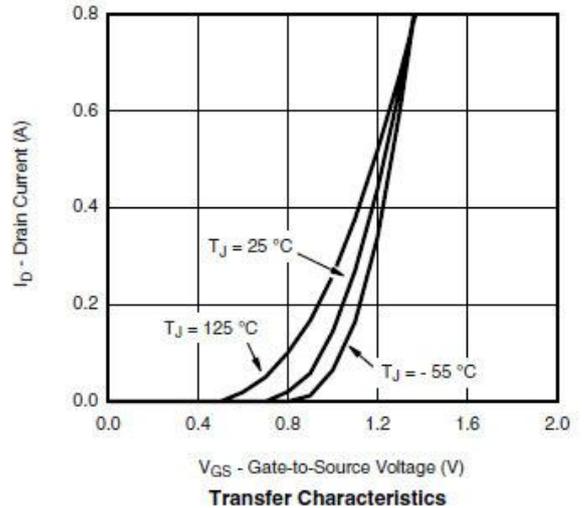
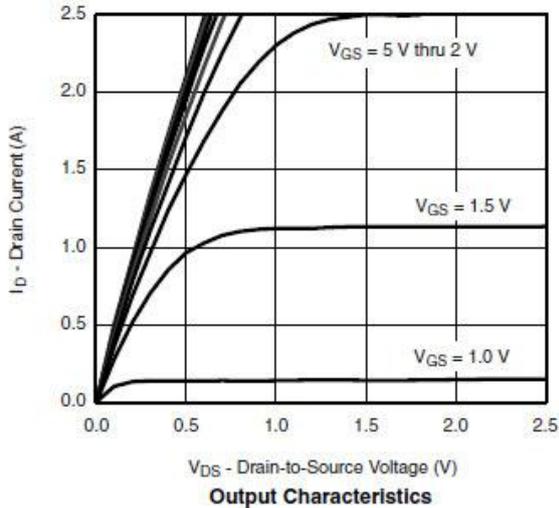
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 250 μ A	20			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D = 250 μ A	0.4		1.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			±0.1	μ A
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 20V, V _{GS} =0V			1	
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} = 4.5V, I _D = 0.8A		300	360	m Ω
		V _{GS} = 2.5V, I _D = 0.7A		340	420	
		V _{GS} = 1.8V, I _D = 0.6A		420	560	
G _{FS}	Forward Transconductance	V _{DS} = 10V, I _D = 0.4A		1.0		S
V _{SD}	Diode Forward Voltage	I _S = 0.15A, V _{GS} =0V		0.65	1.2	V
DYNAMIC						
Q _{g(TOT)}	Total Gate Charge	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 0.6A		1.06		nC
Q _{gs}	Gate-Source Charge			0.18		
Q _{gd}	Gate-Drain Charge			0.32		
C _{iss}	Input Capacitance	V _{DS} = 10V, V _{GS} = 0V, f=1MHz		70		pF
C _{oss}	Output Capacitance			20		
C _{rss}	Reverse Transfer Capacitance			8		
t _{d(on)}	Turn-On Delay Time	V _{DS} = 10V, R _G = 1Ω I _D =0.5A, V _{GS} = 4.5V, RL=20Ω		18	26	ns
t _r	Rise Time			20	28	
t _{d(off)}	Turn-Off Delay Time			70	110	
t _f	Fall Time			25	40	

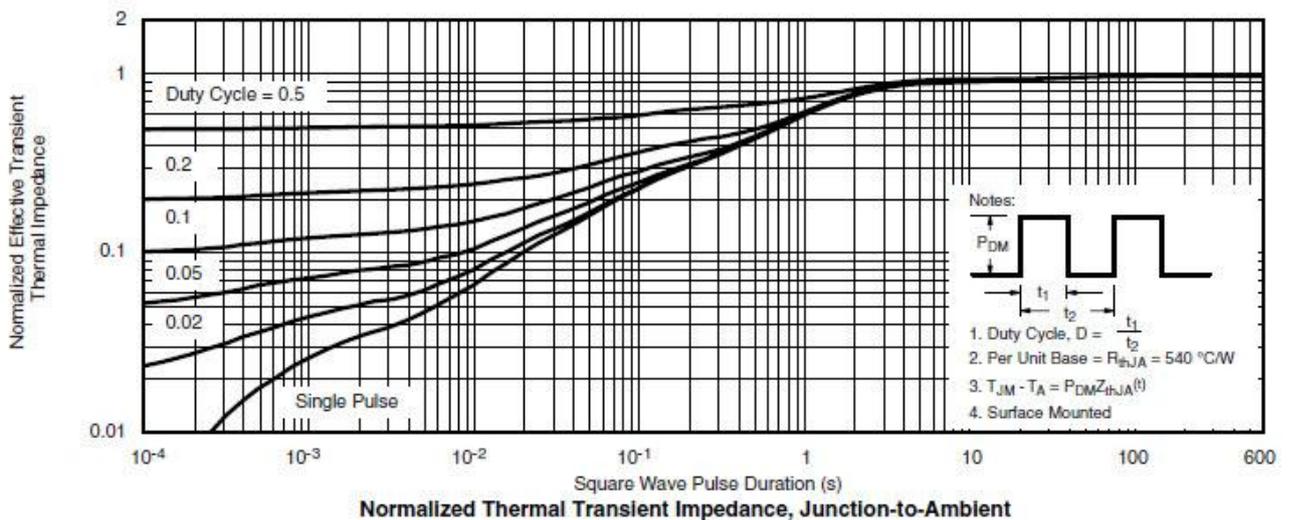
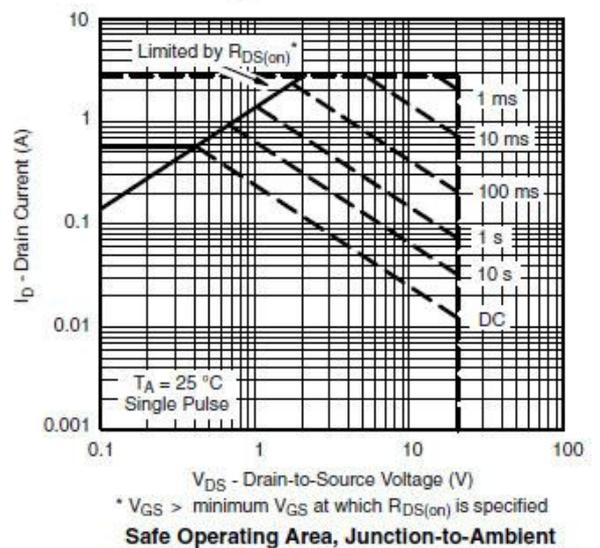
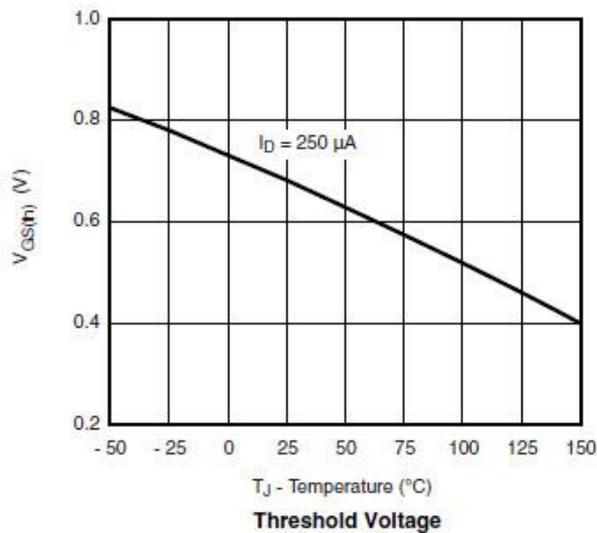
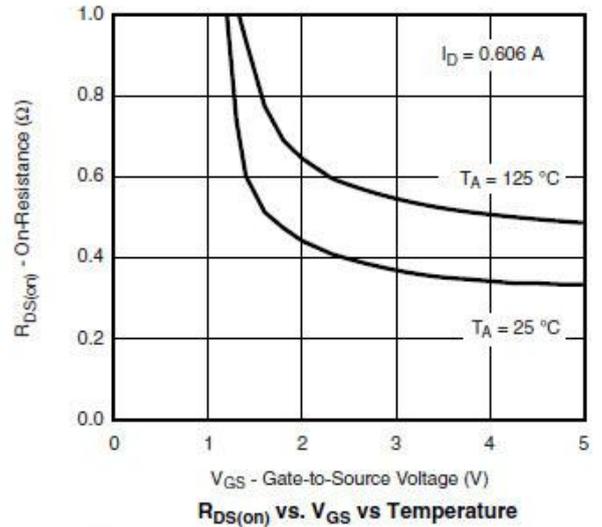
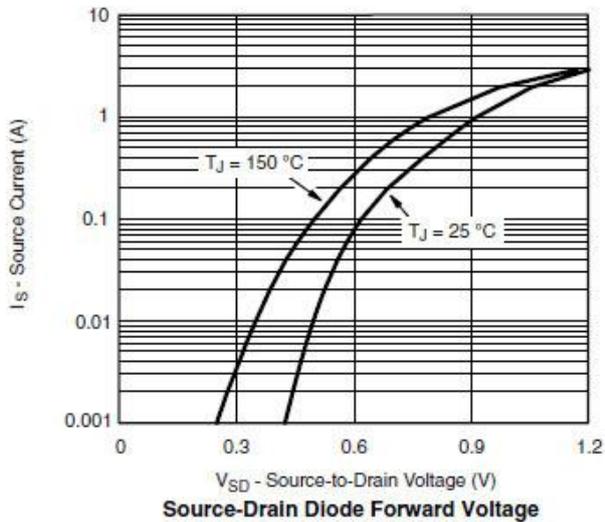
Notes:

1. Pulse width limited by maximum junction temperature. Pulse test: PW ≤ 300 μ s, duty cycle ≤ 2%.
2. For design AID only, not subject to production testing. Switching time is essentially independent of operating temperature.



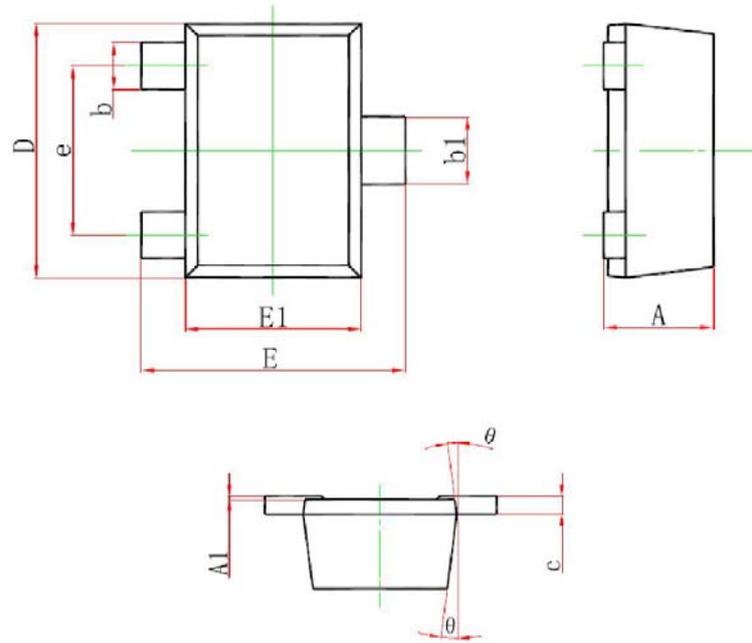
● Typical Performance Characteristics







● Package Information (SOT-723)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		0.500		0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c		0.150		0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	