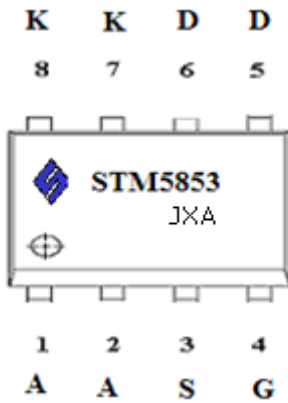


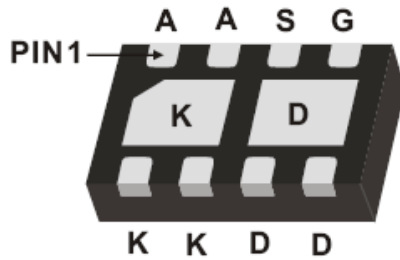
DESCRIPTION

STM5853 is the P-Channel logic enhancement mode power field effect transistors with Schottky Diode. The MOSFET is produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. This device is particularly suited for charging switch for cellular phone and other battery powered circuits

PIN CONFIGURATION
DFN8

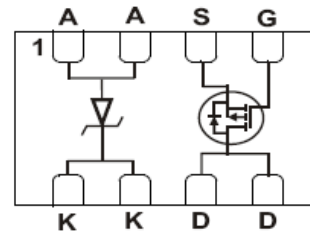


J: Part Marking
X: Year Code
A: Process Code



FEATURE

- -20V/-3.4A, $R_{DS(ON)} = 77\text{m-ohm(Typ.)}$
@VGS = -4.5V
- -20V/-2.4A, $R_{DS(ON)} = 98\text{m-ohm}$
@VGS = -2.5V
- -20V/-1.7A, $R_{DS(ON)} = 135\text{m-ohm}$
@VGS = -1.8V
- 20V/1.0A, $V_f = 0.46\text{V @ } 0.5\text{A}$
- Super high density cell design for extremely low $R_{DS(ON)}$



**Schottky P-channel
Diode Mosfet**

ORDERING INFORMATION

Part Number	Package	Part Marking
STM5853QF8RG	DFN8	SYA

※ Week Code Code : A ~ Z(1~26) ; a ~ z(27~52)
 ※ STM5853QF8RG QF8 : QFN8; R: Tape Reel ; G: Pb - Free

**STM5853**

P Channel Mode MOSFET with Schottky

-3.6A**ABSOLUTE MAXIMUM RATINGS** (Ta = 25°C Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V _{DSS}	-20	V
Reverse Voltage (Schottky)	V _{KA}	20	V
Gate-Source Voltage	V _{GSS}	+/-12	V
Continuous Drain Current (T _J =150 °C)	I _D	TA=25°C -3.6	A
		TA=70°C -2.8	
Pulsed Drain Current	I _{DM}	-15	A
Continuous Source Current (Diode Conduction)	I _S	-1.8	A
Power Dissipation	P _D	TA=25°C 2.1	W
		TA=70°C 1.1	
Operation Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	60	°C/W

All data are for MOSFET unless otherwise noted.



STM5853



P Channel Mode MOSFET with Schottky

-3.6A

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

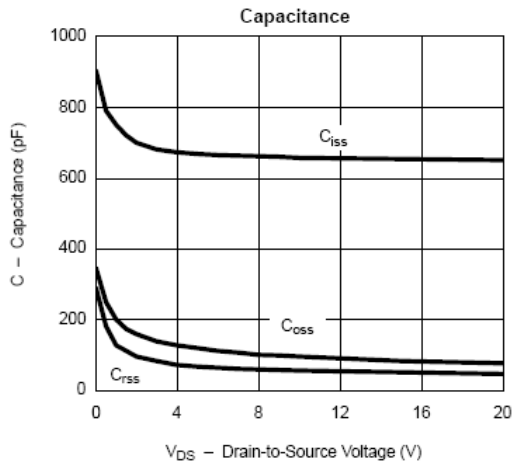
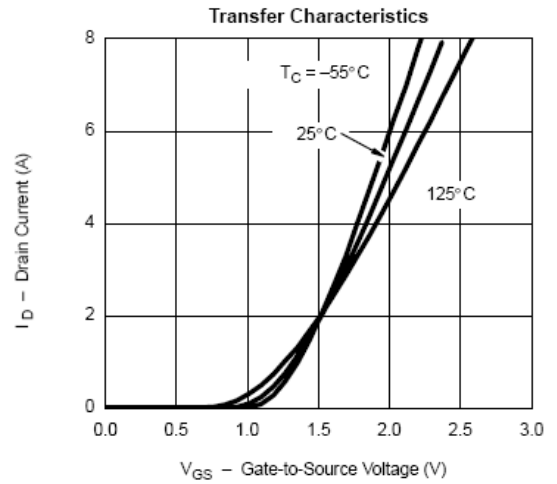
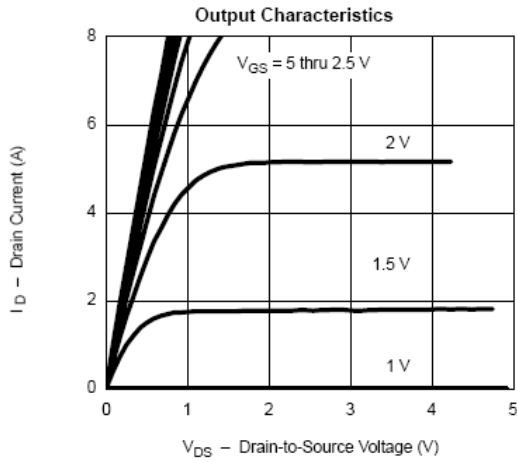
MOSFET

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.35		-0.8	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=+/-12V$			100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	uA
		$V_{DS}=-20V, V_{GS}=0V$ $T_j=55^\circ C$			-5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} \leq -5V, V_{GS} = -4.5V$	-6.0			A
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D=3.4A$		0.077		Ω
		$V_{GS} = -2.5V, I_D=-2.4A$		0.098		
		$V_{GS} = -1.8V, I_D=-1.7A$		0.135		
Forward Transconductance	g_{fs}	$V_{DS} = -5V, I_D=-2.8V$		6		S
Diode Forward Voltage	V_{SD}	$I_S=-1.6A, V_{GS}=0V$		-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-6V, V_{GS} = -4.5V$ $I_D=-2.8A$		4.8	8	nC
Gate-Source Charge	Q_{gs}			1.0		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	$V_{DS}=-6V, V_{GS} = 0V$ $f=1MHz$		485		pF
Output Capacitance	C_{oss}			85		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-6V, R_L=6\Omega$ $I_D=-1A, V_{GEN}=-4.5V$ $R_G=6\Omega$		10	25	nS
	t_r			13	60	
Turn-Off Time	$t_{d(off)}$				18	
	t_f			15	60	

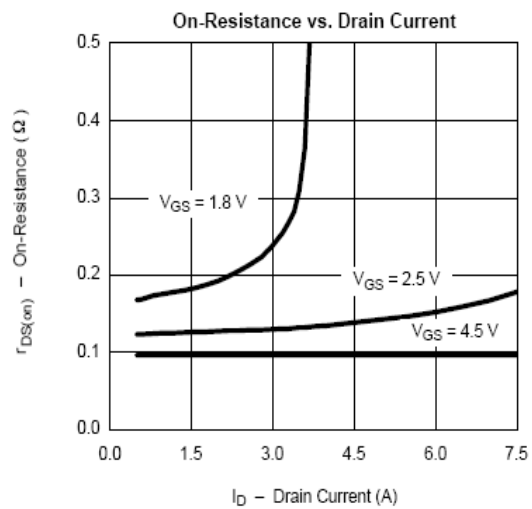
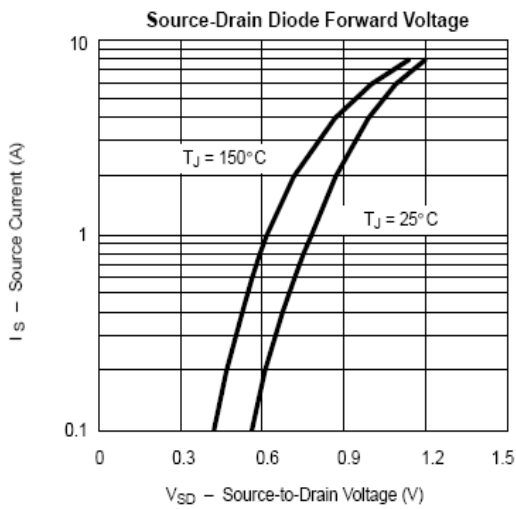
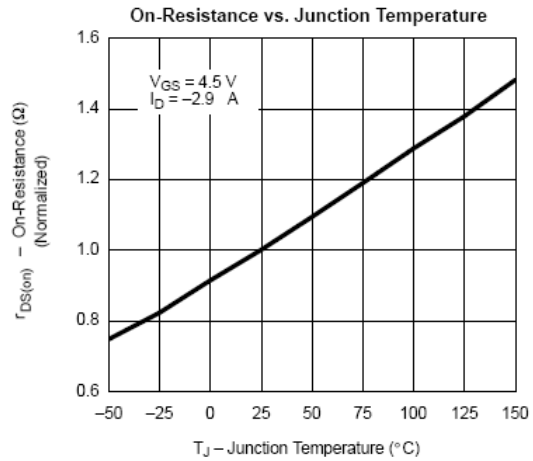
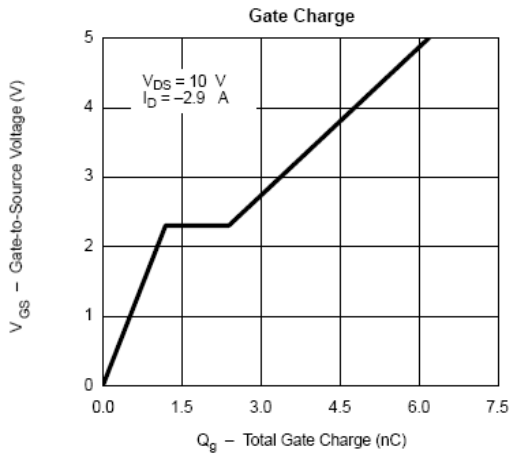
SCHOTTKY

Forward Voltage Drop	V_F	$I_F=0.5A$		0.38	0.46	V
		$I_F=0.5A, T_j=125C$		0.33	0.4	V
Max Reverse Leakage Current	I_R	$V_R=20V$			100	nA
		$V_R=20V, T_j=85C$			1000	
Junction Capacitance	C_T	$V_R=10V$		31		pF

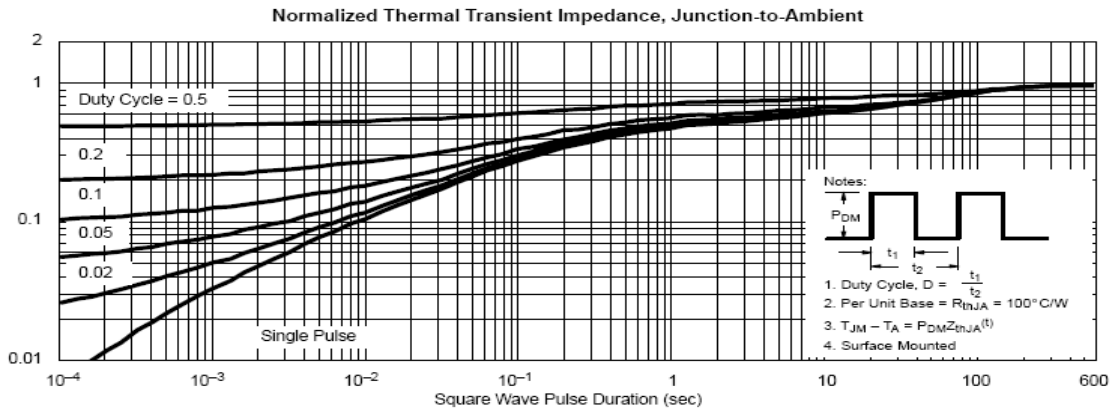
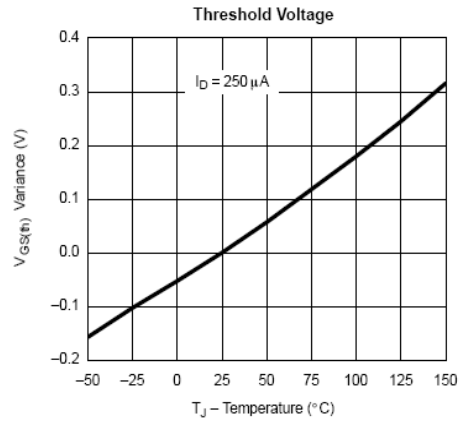
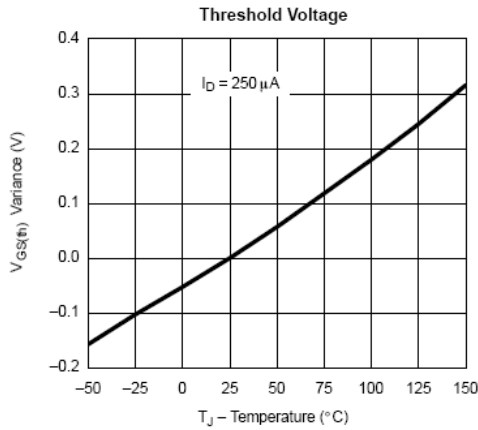
TYPICAL CHARACTERISTICS (25°C unless noted)



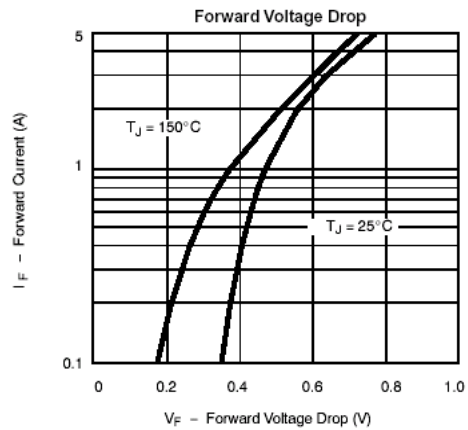
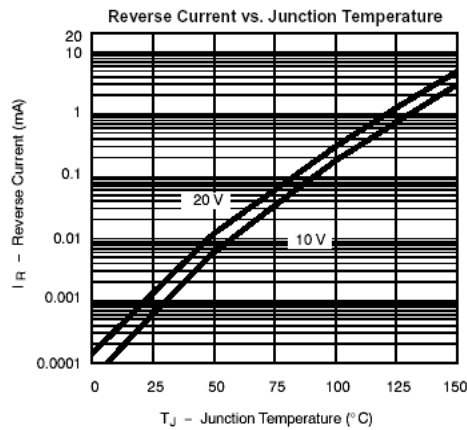
TYPICAL CHARACTERISTICS (25°C unless noted)



TYPICAL CHARACTERISTICS (25°C unless noted)



Schottky



DFN8 PACKAGE OUTLINE

