

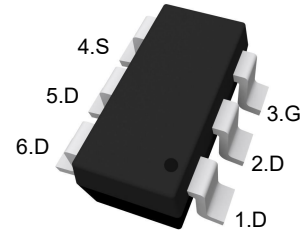
HXM10H03NSG

N-Channel Enhancement Mode Power MOSFET

Features

- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation
- $V_{DS} = 100V, I_D = 3A$
 $R_{DS(on)} < 160m\Omega @ V_{GS} = 10V$

SOT-23-6

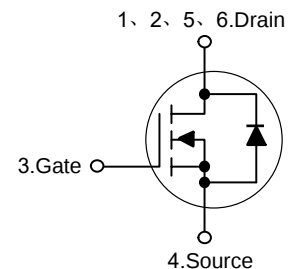


Marking Code: 0103G

Applications

- Power switching application
- Uninterruptible power supply

Schematic Diagram



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	3	A
Drain Current-Pulsed ^{Note1}	I_{DM}	20	A
Maximum Power Dissipation	P_D	1.5	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	83	°C/W
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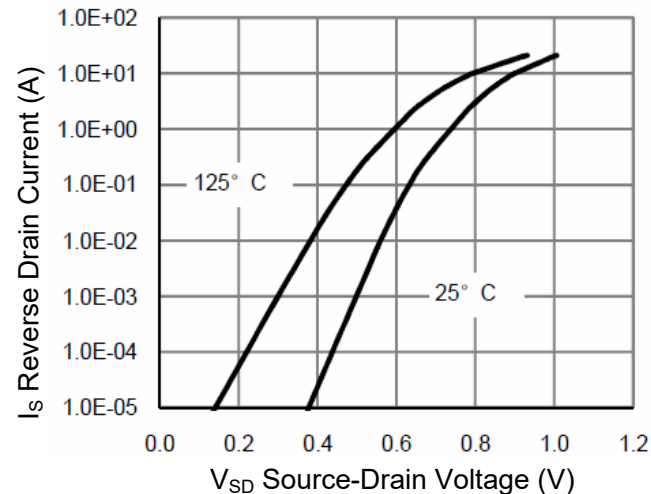
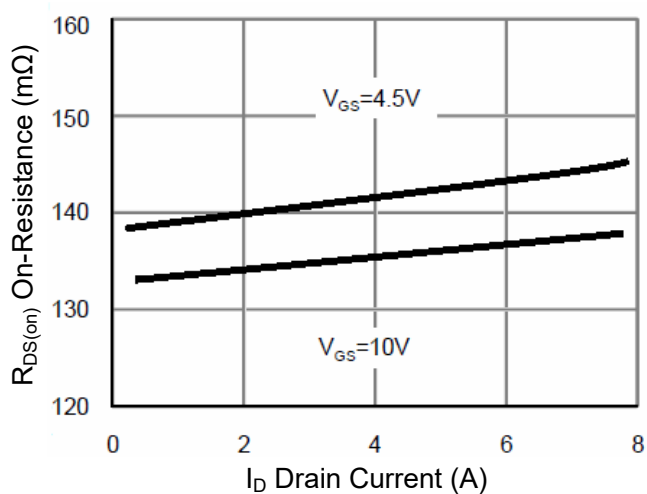
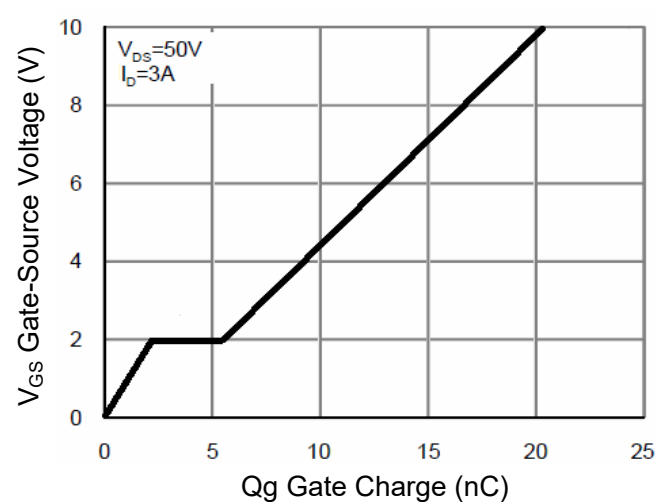
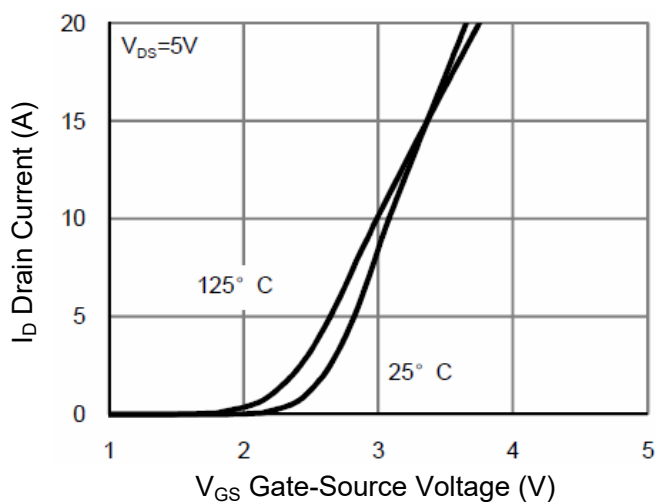
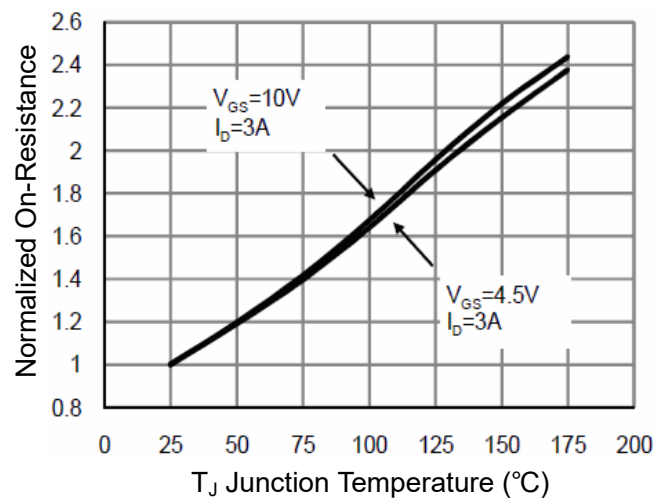
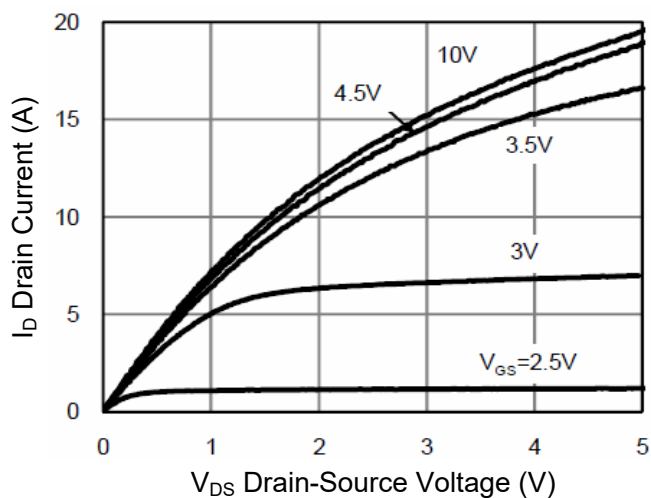
Electrical Characteristics

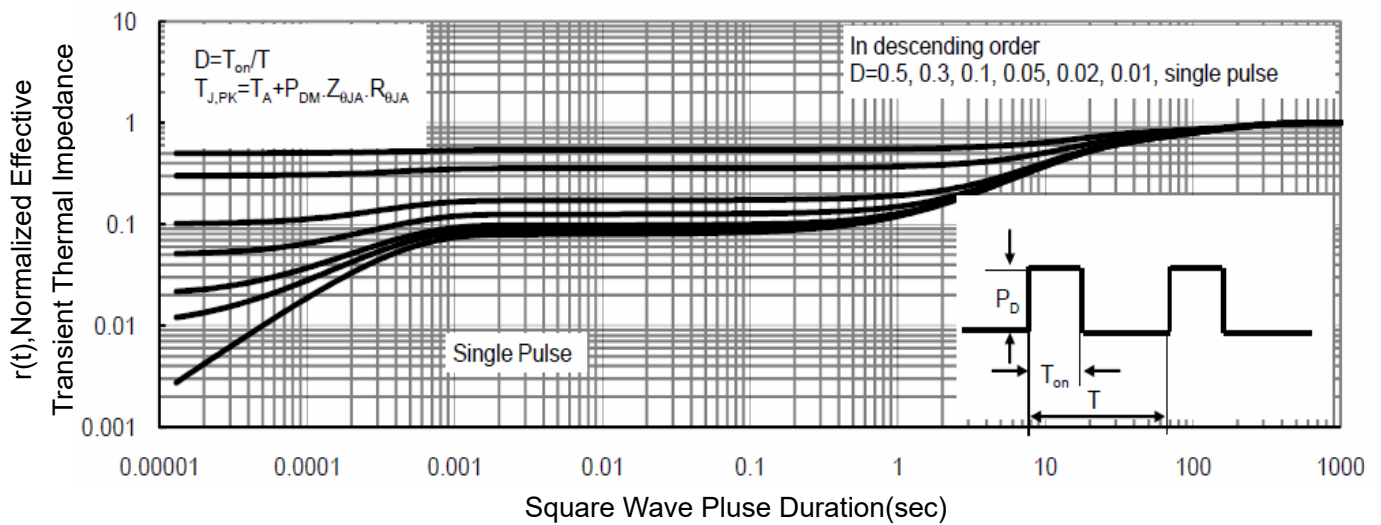
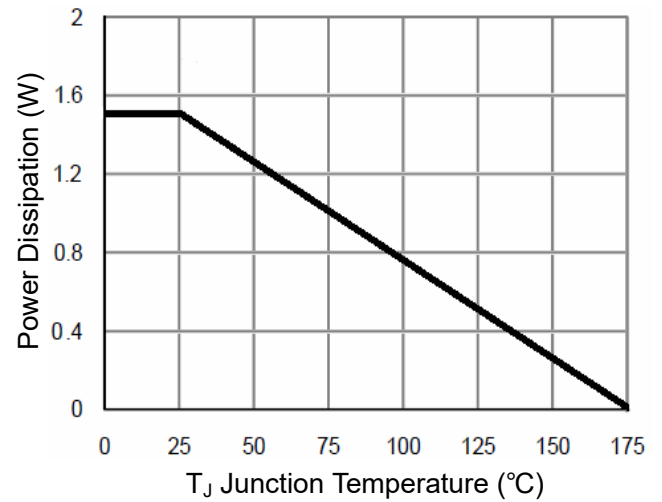
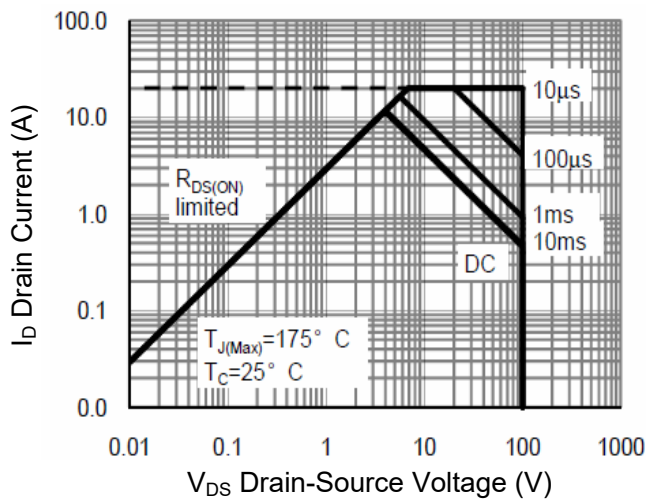
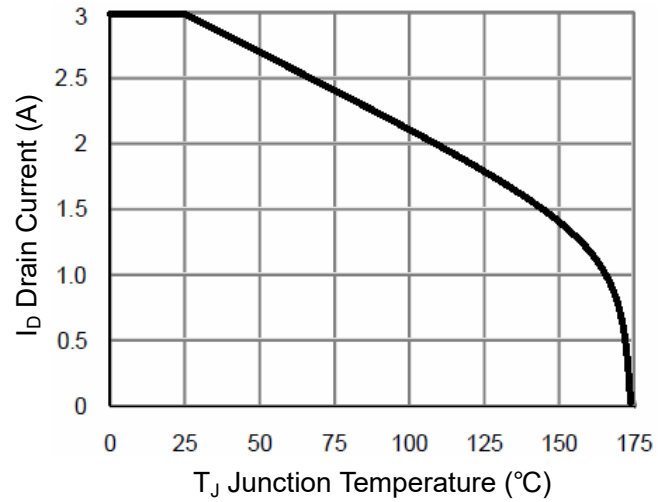
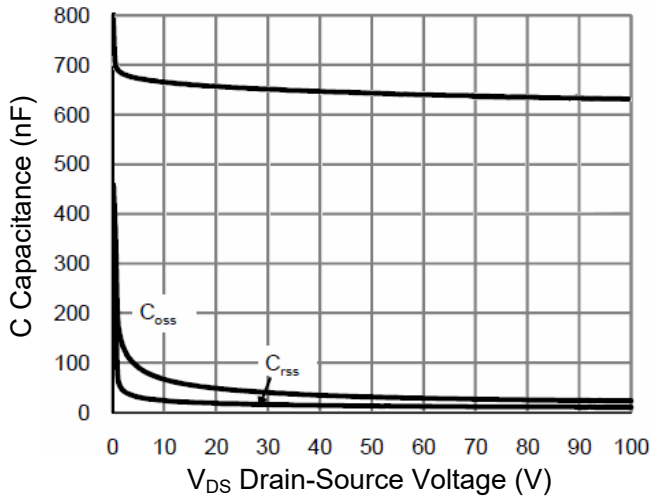
(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.0	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$	--	136	160	m Ω
		$V_{GS}=4.5V, I_D=3A$	--	140	170	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=3A$	--	5	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=1MHz$	--	650	--	pF
Output Capacitance	C_{oss}		--	24	--	pF
Reverse Transfer Capacitance	C_{rss}		--	20	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=50V, R_L=19\Omega$ $V_{GS}=10V, R_{GEN}=3\Omega$	--	6	--	nS
Turn-on Rise Time	t_r		--	4	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	20	--	nS
Turn-off Fall Time	t_f		--	4	--	nS
Total Gate Charge	Q_g	$V_{DS}=50V, I_D=3A, V_{GS}=10V$	--	20	--	nC
Gate-Source Charge	Q_{gs}		--	2.1	--	nC
Gate-Drain Charge	Q_{gd}		--	3.3	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{GS}=0V, I_S=3A$	--	--	1.2	V
Diode Forward Current ^{Note2}	I_S		--	--	3	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
 2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
 3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Characteristic Curves





Package Outline

SOT-23-6

Dimensions in mm

