

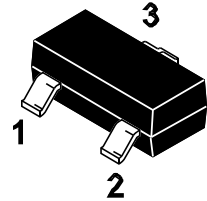
HXM10H02NSA

N-Channel Enhancement Mode Power MOSFET

Features

- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation
- $V_{DS} = 100V, I_D = 2A$
 $R_{DS(on)} < 240m\Omega @ V_{GS} = 10V$

SOT-23



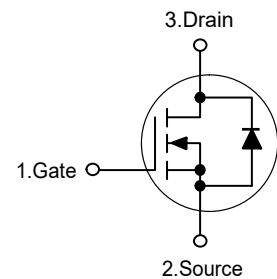
1. Gate 2. Source 3. Drain

Marking Code: 0102

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	2	A
Drain Current-Pulsed ^{Note1}	I_{DM}	5	A
Maximum Power Dissipation	P_D	1.25	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	357	°C/W
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Electrical Characteristics

(Ta=25°C unless otherwise specified)

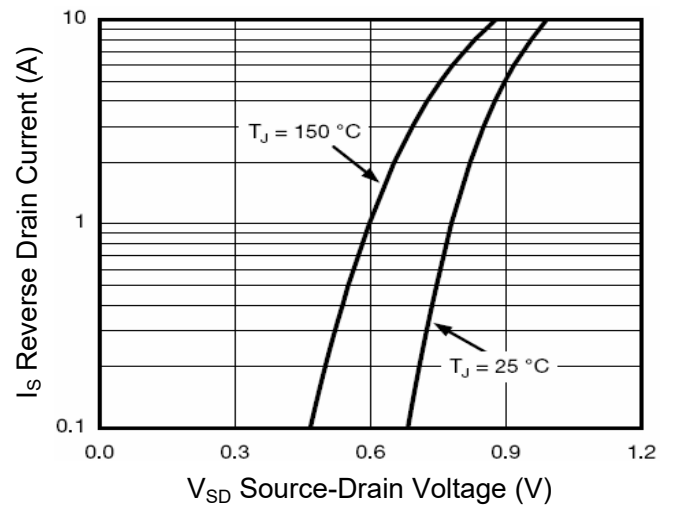
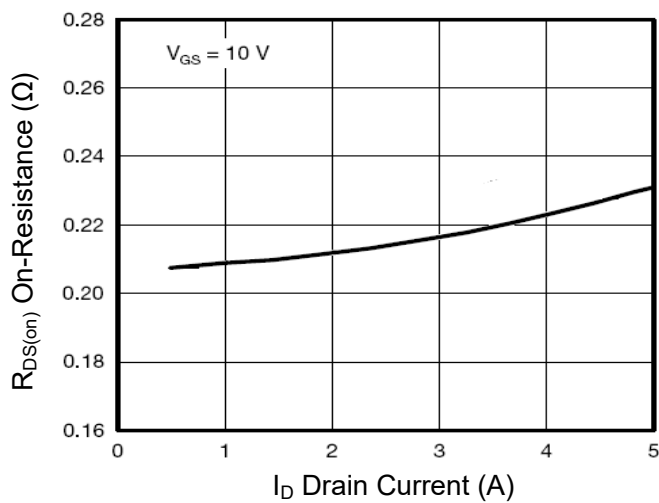
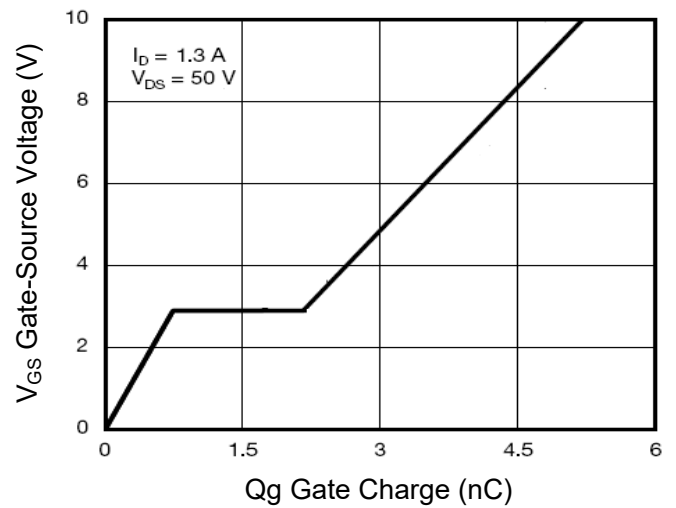
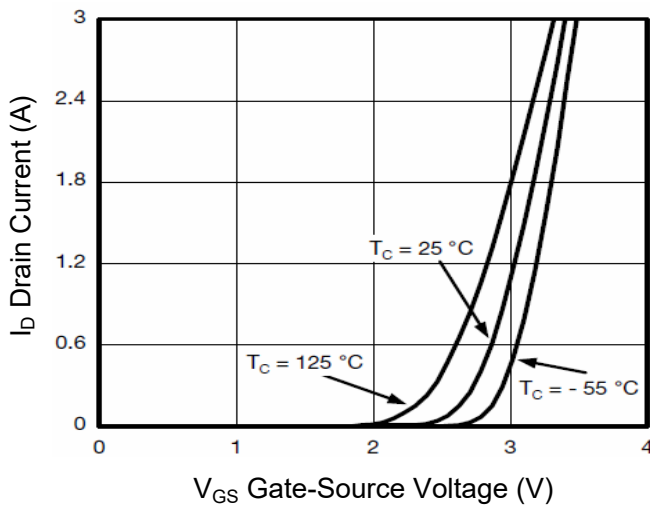
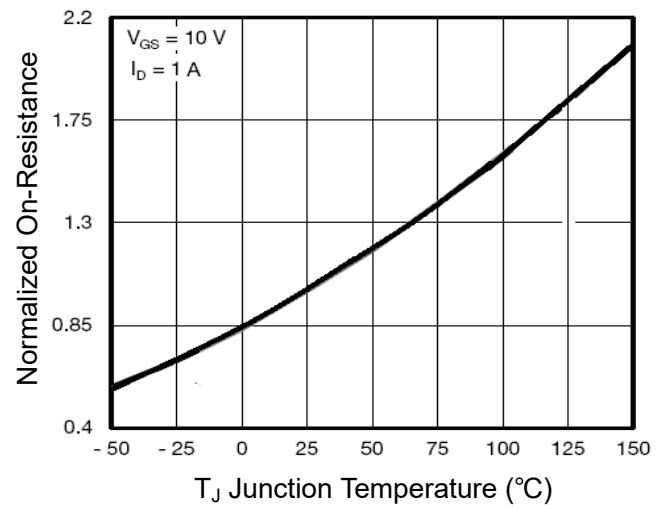
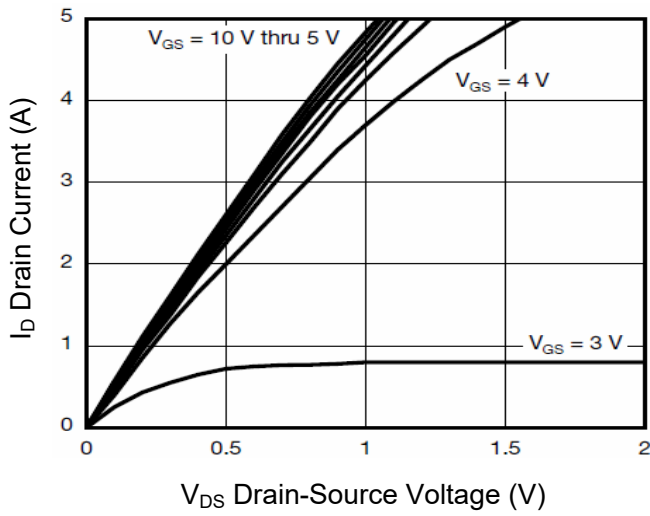
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V,I _D =250μA	100	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V,V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V,V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250μA	1.2	1.8	2.5	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =10V,I _D =1A	--	210	240	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V,I _D =1A	1	--	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V,f=1MHz	--	190	--	pF
Output Capacitance	C _{oss}		--	22	--	pF
Reverse Transfer Capacitance	C _{rss}		--	13	--	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =50V,I _D =1.3A,R _L =39Ω V _{GS} =10V,R _{GEN} =1Ω	--	6	--	nS
Turn-on Rise Time	t _r		--	10	--	nS
Turn-off Delay Time	t _{d(off)}		--	10	--	nS
Turn-off Fall Time	t _f		--	6	--	nS
Total Gate Charge	Q _g	V _{DS} =50V,I _D =1.3A, V _{GS} =10V	--	5.2	--	nC
Gate-Source Charge	Q _{gs}		--	0.75	--	nC
Gate-Drain Charge	Q _{gd}		--	1.4	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V _{SD}	V _{GS} =0V,I _S =1.3A	--	--	1.2	V
Diode Forward Current ^{Note2}	I _S		--	--	2	A

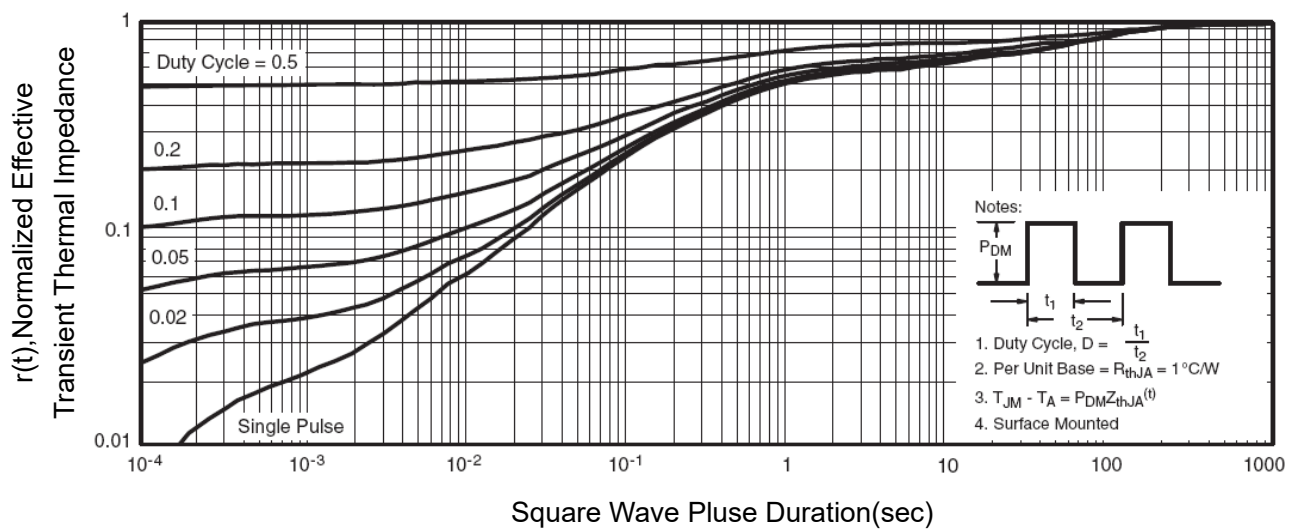
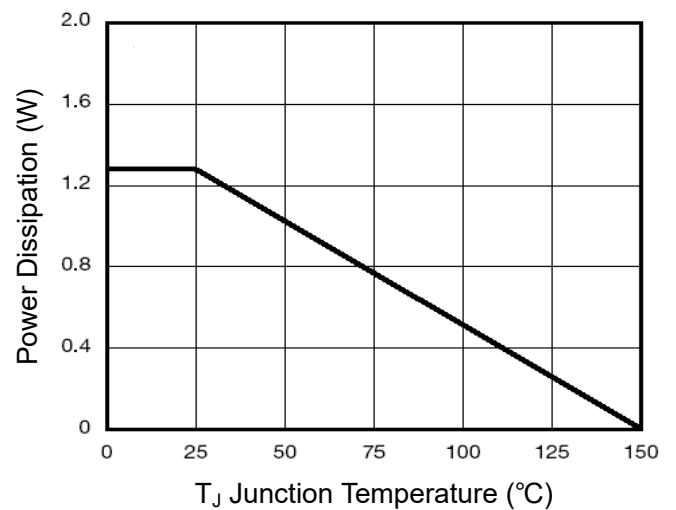
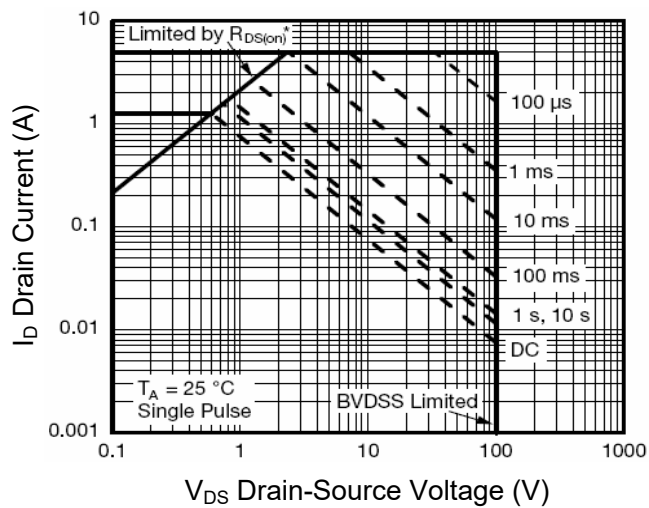
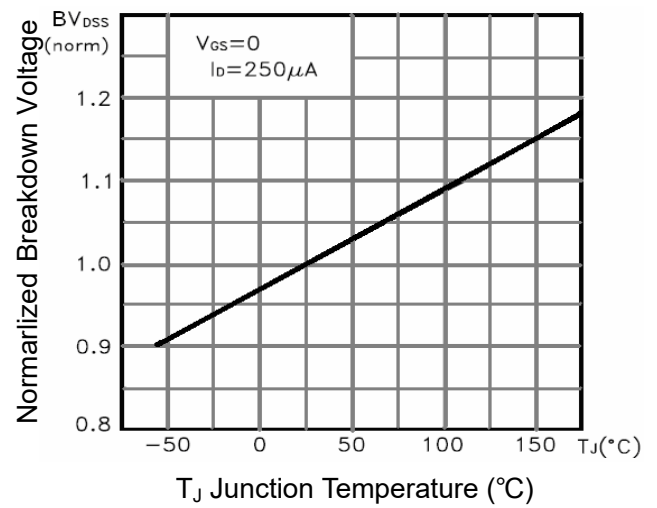
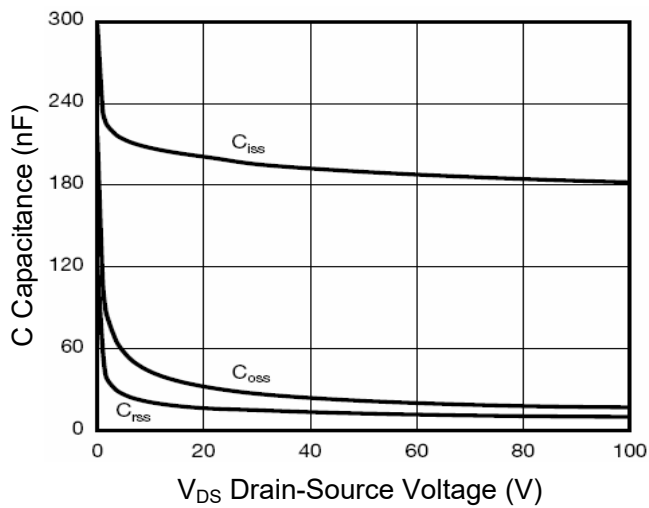
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

3. Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

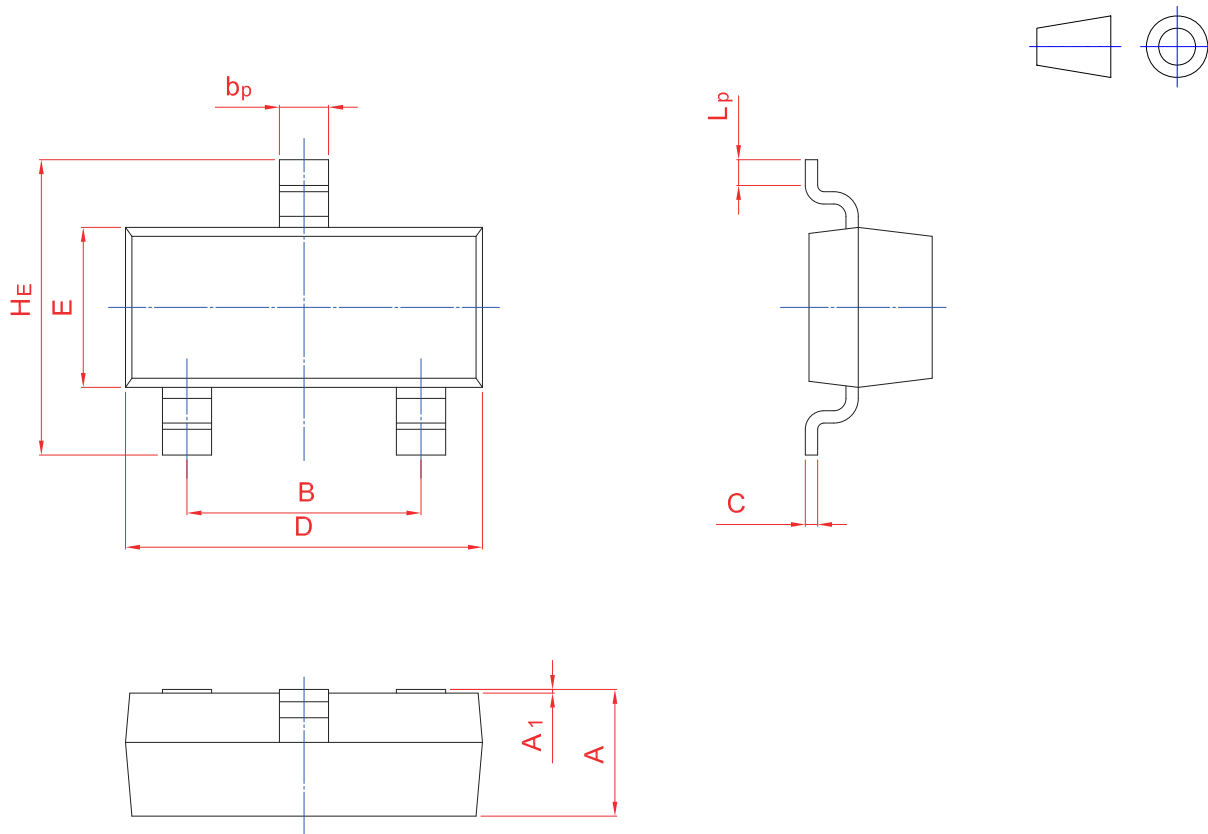
Typical Characteristic Curves





Package Outline

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.89	2.04 1.78	0.51 0.30	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20