

General Description

The HSSX2204 is the high cell density trench N-ch MOSFETs, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The HSSX2204 meets the RoHS and Green Product requirement with full function reliability approved.

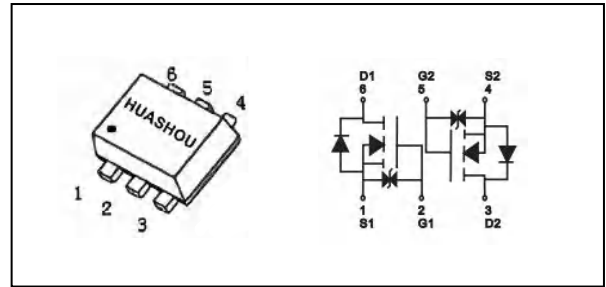
Features

- Fast Switching Speed
- Super Low Gate Charge
- High-Side Switching
- Low Threshold
- ESD Protected up to 2KV

Product Summary

V_{DS}	20	V
$R_{DS(ON),Max}$	500	mΩ
I_D	0.6	A

SOT-563 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 4.5V^1$	0.8	A
I_{DM}	Pulsed Drain Current ²	3.2	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ³	0.15	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	800	$^\circ\text{C/W}$



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	20	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =4.5V, I _D =600mA	---	300	500	mΩ
		V _{GS} =2.5V, I _D =400mA	---	600	800	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	0.5	0.7	1.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =20V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =20V, V _{GS} =0V, T _J =55°C	---	---	5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±8V, V _{DS} =0V	---	---	±10	uA
Q _g	Total Gate Charge (4.5V)	V _{DS} =6V, V _{GS} =4.5V, I _D =0.3A	---	3.6	---	nC
Q _{gs}	Gate-Source Charge		---	2.1	---	
Q _{gd}	Gate-Drain Charge		---	1.5	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =6V, V _{GS} =4.5V, R _G =6Ω I _D =0.3A	---	5.8	---	ns
T _r	Rise Time		---	15	---	
T _{d(off)}	Turn-Off Delay Time		---	21	---	
T _f	Fall Time		---	7.1	---	
C _{iss}	Input Capacitance	V _{DS} =6V, V _{GS} =0V, f=1MHz	---	42	---	pF
C _{oss}	Output Capacitance		---	25	---	
C _{rss}	Reverse Transfer Capacitance		---	12	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	0.8	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =0.3A, T _J =25°C	---	---	1.2	V

Note :

1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

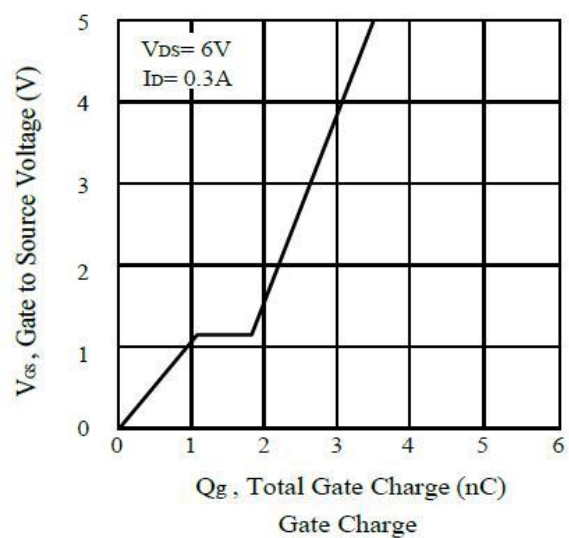
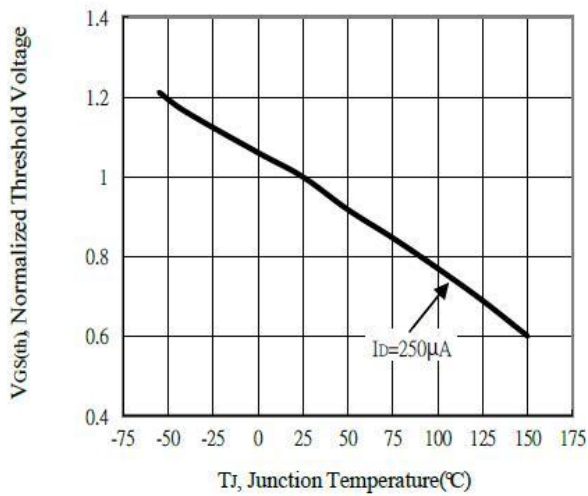
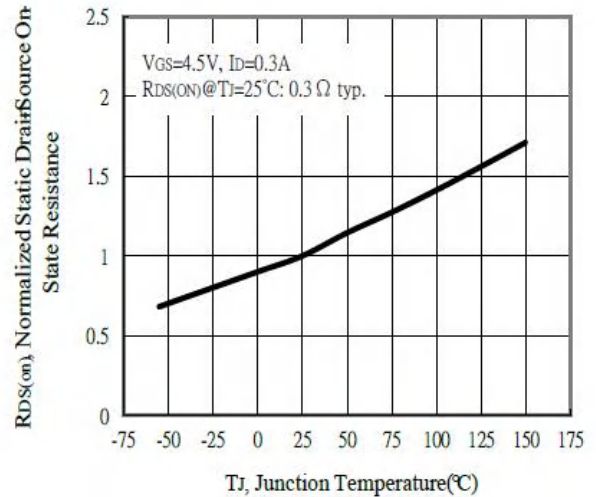
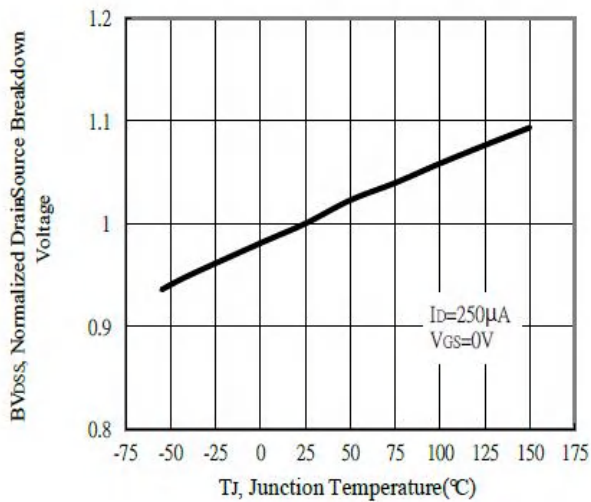
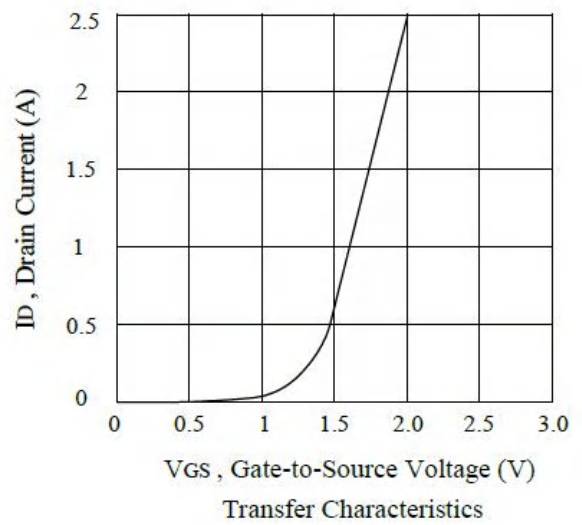
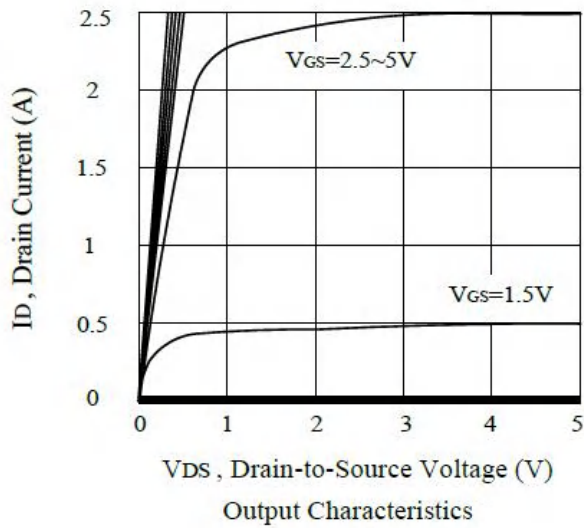
2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%

3.The power dissipation is limited by 150°C junction temperature

4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

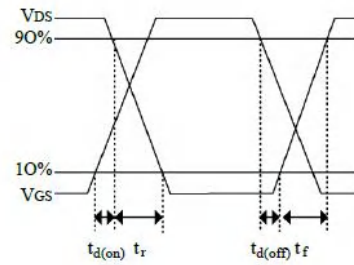
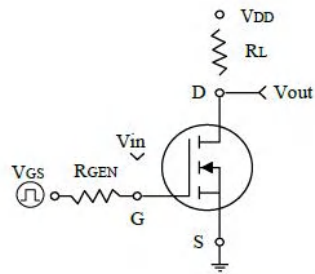
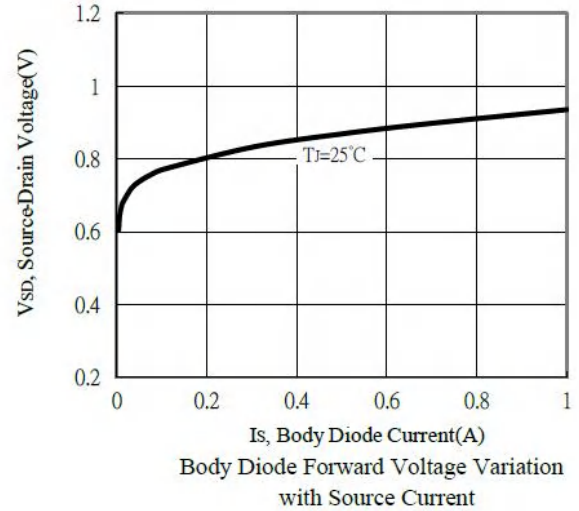
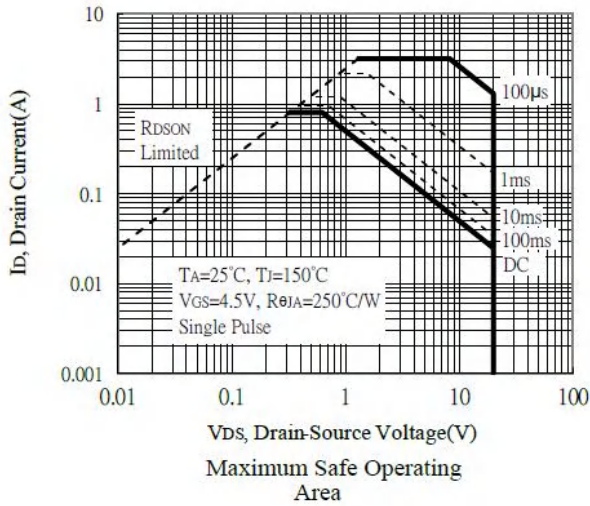


Typical Characteristics

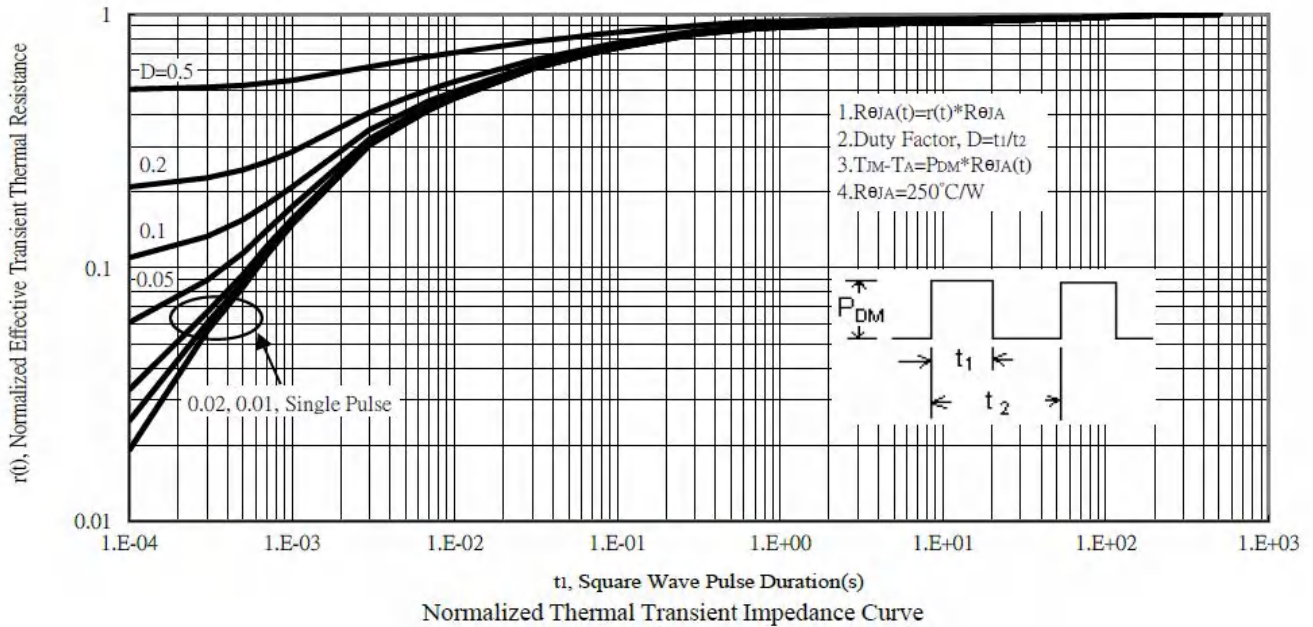




Dual N 20V Fast Switching MOSFETs



Switching Test Circuit and Switching Waveforms

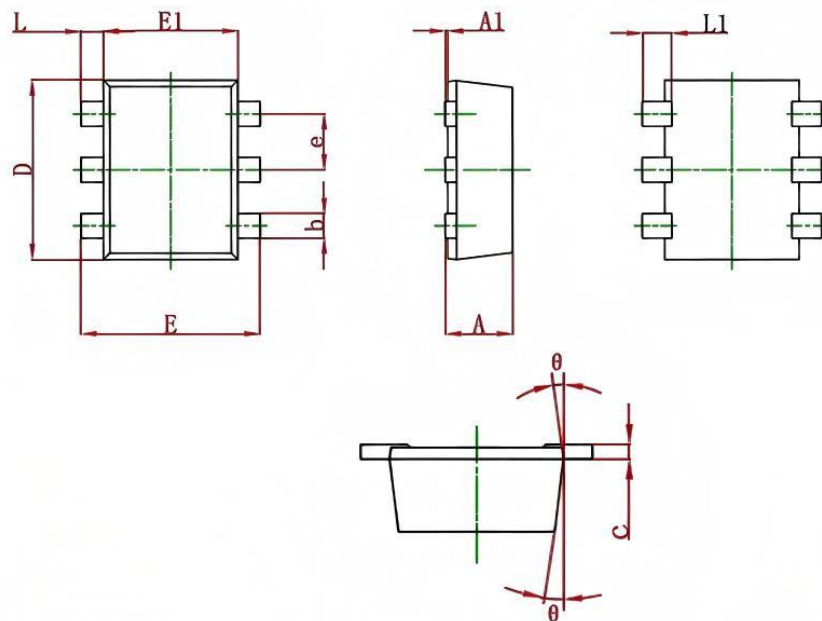




Ordering Information

Part Number	Package code	Packaging
HSSX2204	SOT-563	3000/Tape&Reel

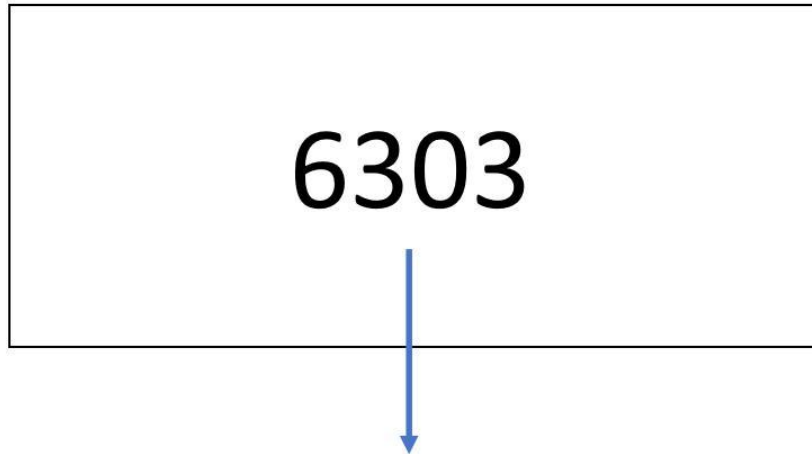
SOT-563 Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
AI	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
C	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
EI	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	7 °REF.		7 °REF.	



HSSX2204 TOP Marking



Part Number