

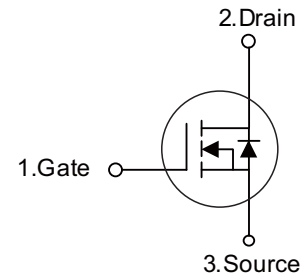


MOT5N10A3 N-CHANNEL MOSFET

■ MOT5N10A3 PRODUCT CHARACTERISTICS

VDSS	100V
$R_{DS(on)max}(V_{GS} @=10\text{ V})$	130mΩ
$R_{DS(on)max}(V_{GS} @=4.5\text{ V})$	180mΩ
ID	5

Symbol

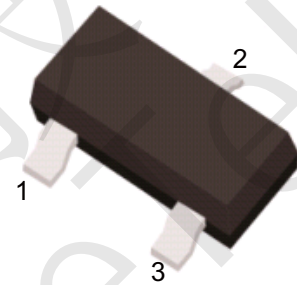


■ MOT5N10A3 APPLICATIONS

Load/Power Switching
Interfacing Switching

■ MOT5N10A3 FEATURES

High dense cell design for extremely low $R_{DS(ON)}$
Exceptional on-resistance and maximum DC current capability



■ MOT5N10A3 ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT5N10A3	SOT-23-3L	3000pieces/Real

■ MOT5N10A3 ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($V_{GS}=4.5\text{V}$, $T_A=25^\circ\text{C}$) (Note 2)	I_D	5	A
Pulsed Drain Current (Note 3, 4)	I_{DM}	10	A
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	0.35	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

- Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Surface mounted on 1 in² copper pad of FR4 board; 270 $^\circ\text{C}/\text{W}$ when mounted on min. copper pad.
3. Repetitive Rating: Pulse width limited by maximum junction temperature.
4. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

■ MOT5N10A3 THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note)	θ_{JA}	350	$^\circ\text{C}/\text{W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.



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■ MOT5N10A3 ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified)

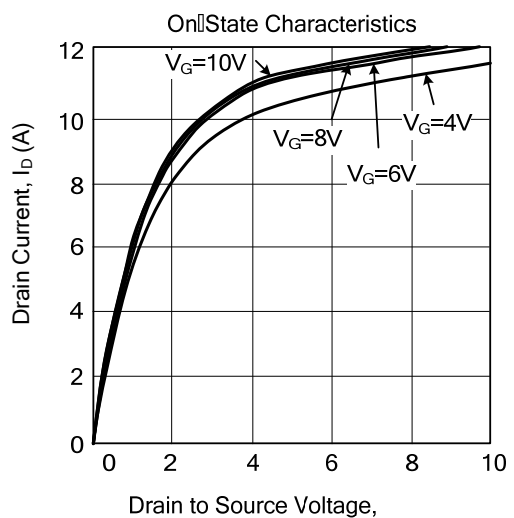
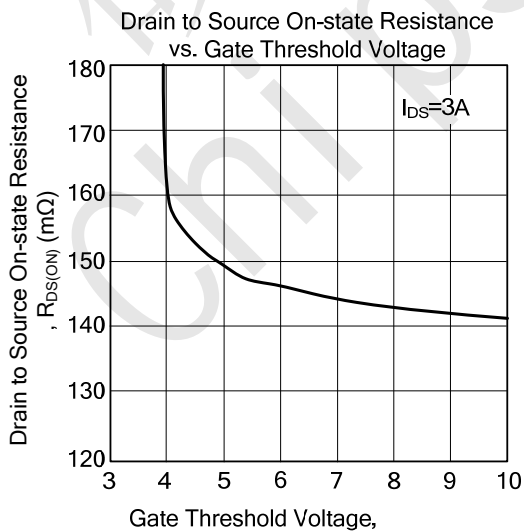
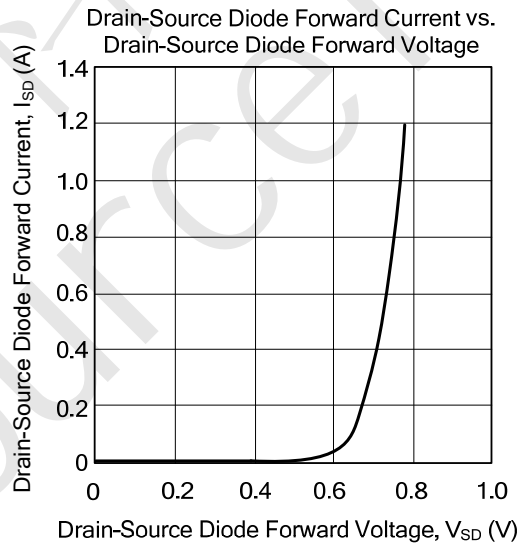
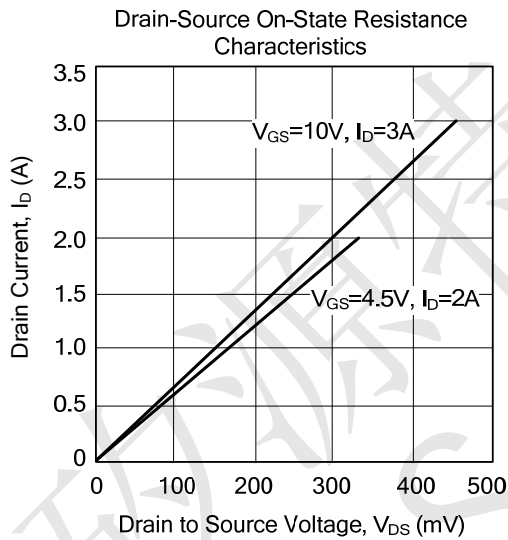
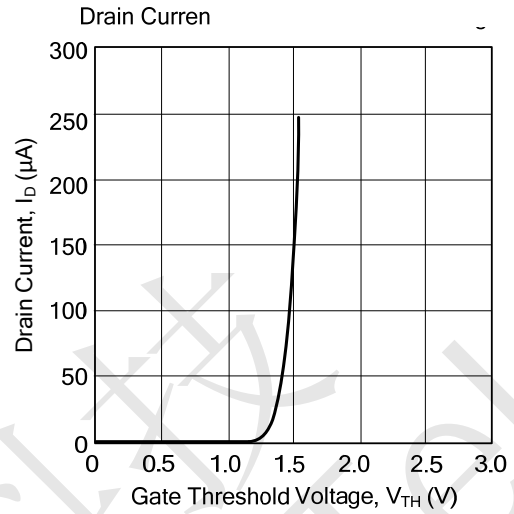
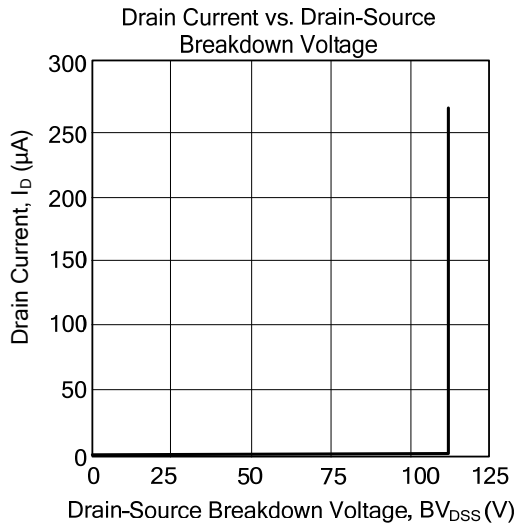
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	100			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Reference to 25°C, I _D =1mA		0.05		V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			10	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.0		3.0	V
Drain to Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3.0A			130	mΩ
		V _{GS} =4.5V, I _D =2.0A			180	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		490	780	pF
Output Capacitance	C _{OSS}			41		pF
Reverse Transfer Capacitance	C _{RSS}			33		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note)	Q _G	V _{GS} =4.5V, V _{DS} =48V, I _D =3A		18		nC
Gate Source Charge	Q _{GS}			3.76		nC
Gate Drain Charge	Q _{GD}			8.5		nC
Turn-ON Delay Time (Note)	t _{D(ON)}	V _{GS} =10V, V _{DS} =30V, I _D =1A, R _D =30Ω, R _G =3.3Ω		22		ns
Turn-ON Rise Time	t _R			18		ns
Turn-OFF Delay Time	t _{D(OFF)}			190		ns
Turn-OFF Fall-Time	t _F			65		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V _{SD}	I _S =1.2A, V _{GS} =0V			1.2	V
Reverse Recovery Time	t _{rr}	I _S =3A, V _{GS} =0V, di/dt=100A/μs		25		ns
Reverse Recovery Charge	Q _{rr}				26	

Note: Pulse width ≤300μs, duty cycles ≤2%.



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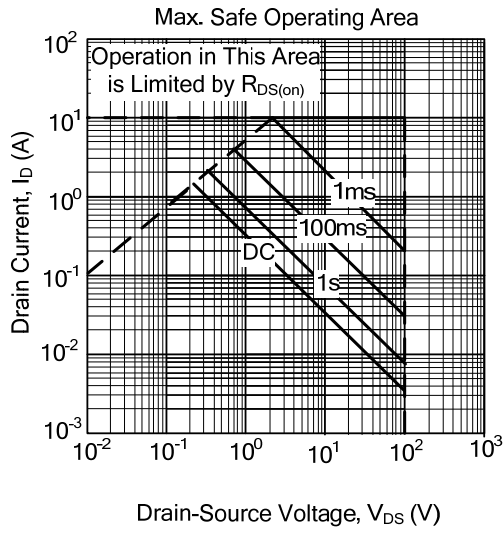
■ MOT5N10A3 TYPICAL CHARACTERISTICS





MOT5N10A3 N-CHANNEL MOSFET

■ MOT5N10A3 TYPICAL CHARACTERISTICS(Cont.)



矽源特科技
ChipSourceTek



MOT5N10A3 N-CHANNEL MOSFET

■ MOT5N10A3 SOT-23-3L PACKAGE OUTLINE DIMENSIONS

