

SOT-23-3 Plastic-Encapsulate Transistors

3416 MOSFET(N-Channel)

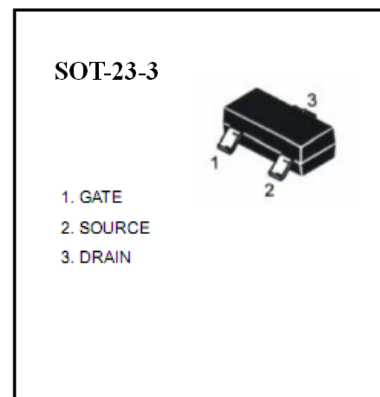
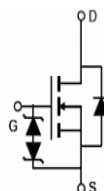
FEATURES

High Power and current handing capability

Lead free product is acquired

Surface Mout Package

ESD Rating:2000V HBM



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source voltage	20	V
V _{GS}	Gate-Source voltage	±12	V
I _D	Drain current	6	A
P _D	Power Dissipation	1.4	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	20			V
Gate-Threshold Voltage	V _{th(GS)}	V _{DS} = V _{GS} , I _D =250 uA	0.45	0.7	1.0	V
Gate-body Leakage	I _{GSS}	V _{DS} =0V, V _{GS} = ± 10V			± 10	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	uA
Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =4. 5V, I _D =6A		19	22	m Ω
		V _{GS} =2. 5V, I _D =5A		21	27	m Ω
Forward Trans conductance	g _{fs}	V _{DS} =5V, I _D =4.5A	11			s
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		660		pF
Output Capacitance	C _{oss}			160		
Reverse Transfer Capacitance	C _{rss}			87		
Switching Capacitance						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, V _{GS} =5V R _{GEN} =3 Ω		0.5		nS
Turn-on Rise Time	t _r			1		nS
Turn-off Delay Time	t _{d(off)}			12		nS
Turn-off Fall Time	t _f			4		nS
Total Gate Charge	Q _g	V _{DS} =10V, I _D =6A, V _{GS} =4. 5V,		8		nC
Gate-Source Charge	Q _{gs}			2.5		nC
Gate-Drain Charge	Q _{gd}			3		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _D =1A			-1.2	V

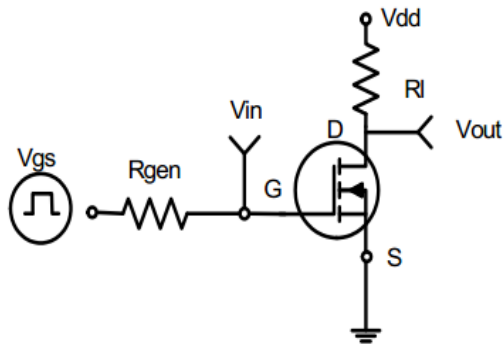


Figure 1: Switching Test Circuit

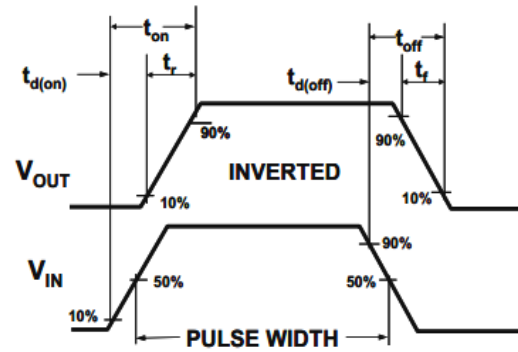


Figure 2: Switching Waveforms

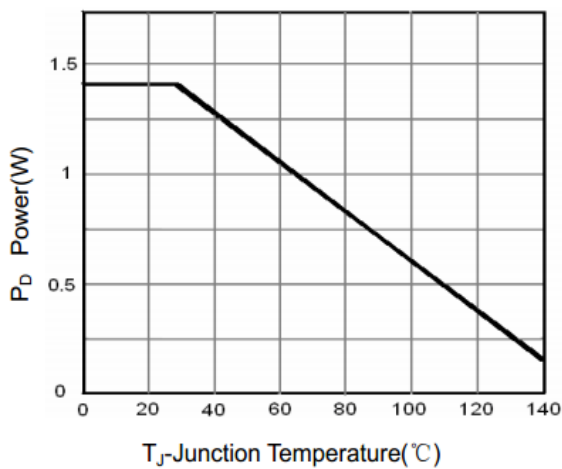


Figure 3 Power Dissipation

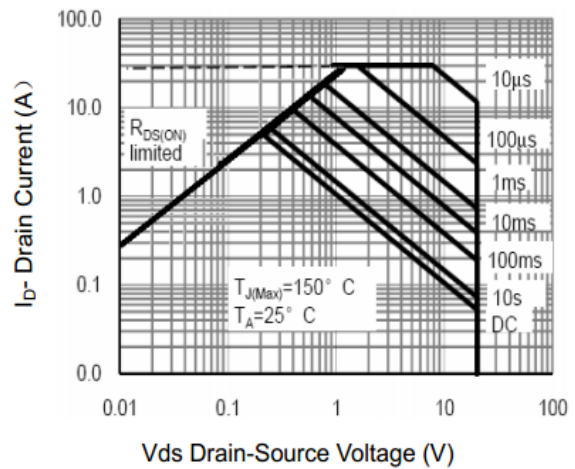


Figure 4 Safe Operation Area

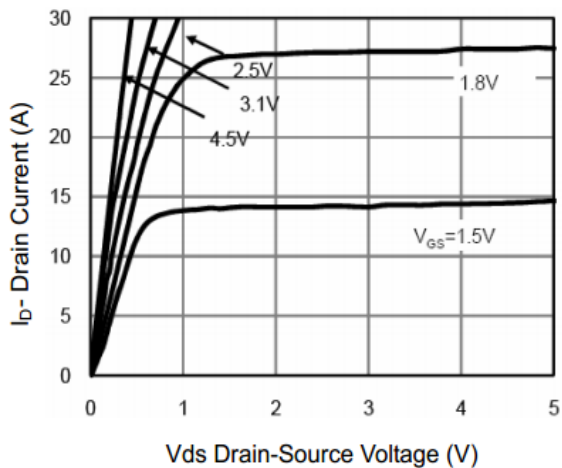


Figure 5 Output CHARACTERISTICS

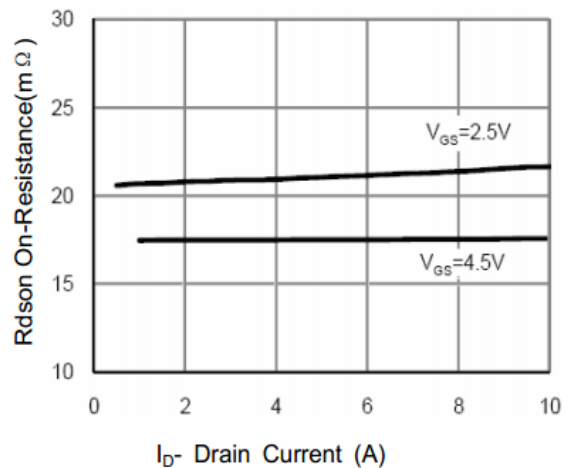


Figure 6 Drain-Source On-Resistance