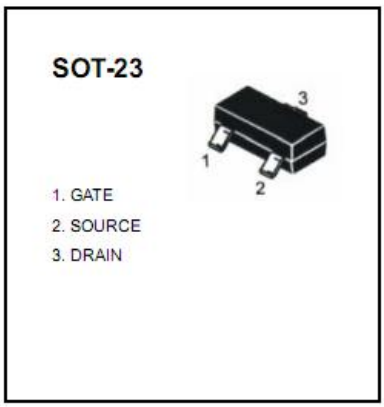
SOT-23 Plastic-Encapsulate Transistors

3415 MOSFET(P-Channel)



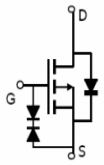
FEATURES

High Power and current handing capability

Lead free product is acquired

Surface Mout Package

ESD Rating:2500V HBM



MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	-20	V
V_{GS}	Gate-Source voltage	±10	V
I_D	Drain current	-4	A
P_D	Power Dissipation	1.4	W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃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	-0.4	-0.65	-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=-4A		34	47	mΩ
		V_{GS}=-2.5V, I_D=-4A		44	60	mΩ
Forward Trans conductance	gfs	V_{DS}=-5V, I_D=-4A	8			s
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=-10V, V_{GS}=0V, f=1MHz		950		pF
Output Capacitance	Coss			165		
Reverse Transfer Capacitance	Crss			120		
Switching Capacitance						
Turn-on Delay Time	td(on)	V_{DD}=-10V, V_{GS}=-4.5V R_{GEN}=3Ω		12		nS
Turn-on Rise Time	t_r			10		nS
Turn-off Delay Time	td(off)			19		nS
Turn-off Fall Time	t_f			25		nS
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-4A, V_{GS}=-4.5V,		12		nC
Gate-Source Charge	Q_{gs}			1.4		nC
Gate-Drain Charge	Q_{gd}			3.6		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_D=-1A			-1.2	V

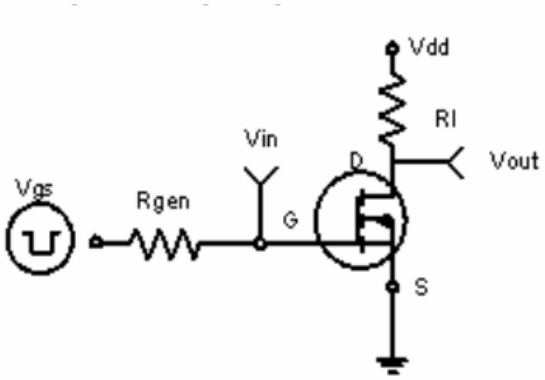


Figure 1:Switching Test Circuit

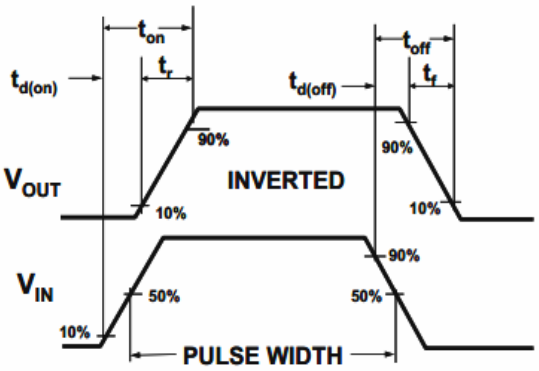


Figure 2:Switching Waveforms

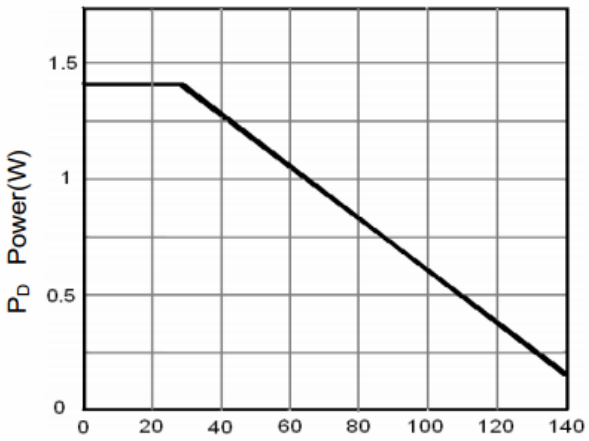


Figure 3 Power Dissipation

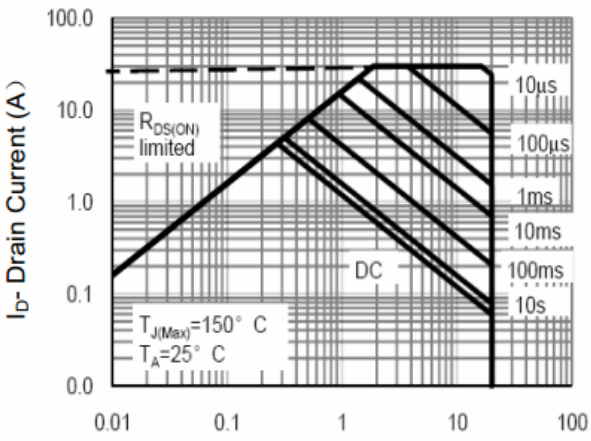


Figure 4 Safe Operation Area

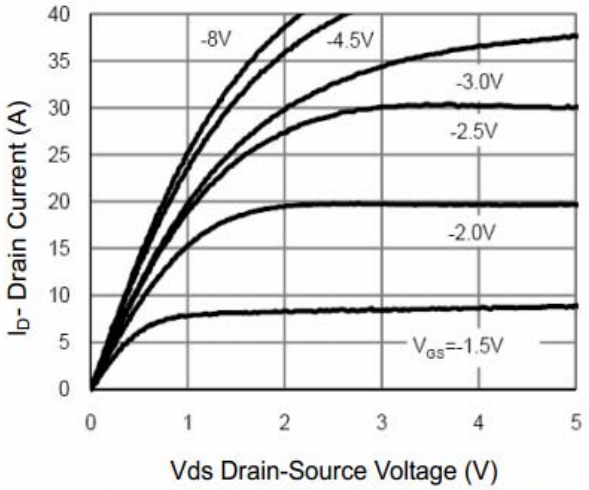


Figure 5 Output CHARACTERISTICS

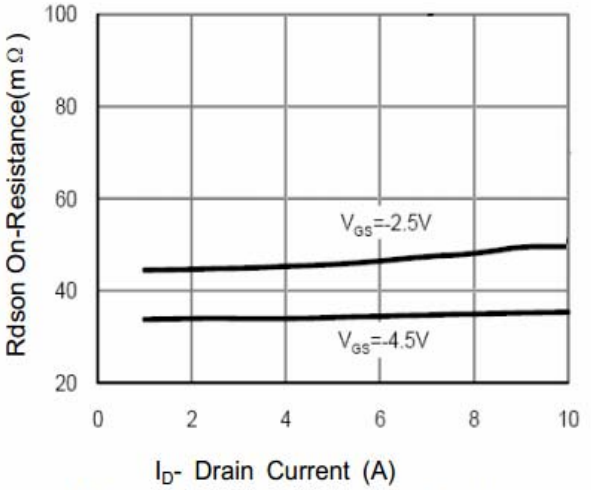


Figure 6 Drain-Source On-Resistance