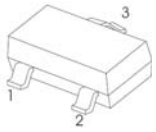
SOT-23 Plastic-Encapsulate MOSFETS

RYN2328

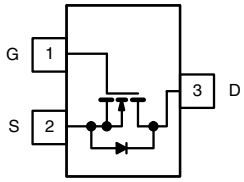
PRODUCT SUMMARY	
V_{DS} (V)	100
$R_{DS(on)}$ (Ω) at V_{GS} = 10 V	0.300
I_D (A)	3
Configuration	Single

SOT-23

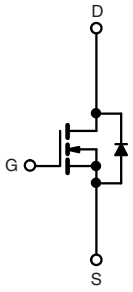


1. GATE
2. SOURCE
3. DRAIN

TO-236
(SOT-23)



Top View
RYN2328
* Marking Code



N-Channel MOSFET

ORDERING INFORMATION	
Package	SOT-23
Lead (Pb)-free and Halogen-free	SQ2328ES-T1-GE3

ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C, unless otherwise noted)				
PARAMETER		**SYMBOL**	**LIMIT**	**UNIT**
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	T_C = 25 °C	I_D	3	A
	T_C = 125 °C		1.2	
Continuous Source Current (Diode Conduction)		I_S	3.7	
Pulsed Drain Current[a]		I_{DM}	8	
Single Pulse Avalanche Current	L = 0.1 mH	I_{AS}	5	
Single Pulse Avalanche Energy		E_{AS}	1.3	mJ
Maximum Power Dissipation[a]	T_C = 25 °C	P_D	3	W
	T_C = 125 °C		1	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	- 55 to + 175	°C

THERMAL RESISTANCE RATINGS				
PARAMETER		**SYMBOL**	**LIMIT**	**UNIT**
Junction-to-Ambient	PCB Mount[b]	R_{thJA}	166	°C/W
Junction-to-Foot (Drain)		R_{thJF}	50	

Notes

a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
b. When mounted on 1" square PCB (FR-4 material).
c. Parametric verification ongoing.

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

SPECIFICATIONS (T_C = 25 °C, unless otherwise noted)							
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**MIN.**	**TYP.**	**MAX.**	**UNIT**
Static							
Drain-Source Breakdown Voltage	V_{DS}	V_{GS} = 0 V, I_D = 250 µA		100	-	-	V
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 µA		1.7	2.3	3.0	
Gate-Source Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ± 20 V		-	-	± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS} = 0 V	V_{DS} = 100 V	-	-	1	µA
		V_{GS} = 0 V	V_{DS} = 100 V, T_J = 125 °C	-	-	50	
		V_{GS} = 0 V	V_{DS} = 100 V, T_J = 175 °C	-	-	150	
On-State Drain Current[a]	$I_{D(on)}$	V_{GS} = 10 V	V_{DS} ≥5V	3			A
Drain-Source On-State Resistance[a]	$R_{DS(on)}$	V_{GS} = 10 V	I_D = 1.5 A	-	0.214	0.300	Ω
		V_{GS} = 10 V	I_D = 1.5 A, T_J = 125 °C	-	-	0.552	
		V_{GS} = 10 V	I_D = 1.5 A, T_J = 175 °C	-	-	0.720	
Forward Transconductance[b]	g_{fs}	V_{DS} = 15 V, I_D = 1.5 A		-	3	-	S
Dynamic[b]							
Input Capacitance	C_{iss}	V_{GS} = 0 V	V_{DS} = 25 V, f = 1 MHz	-	152	190	pF
Output Capacitance	C_{oss}			-	28	35	
Reverse Transfer Capacitance	C_{rss}			-	12	15	
Total Gate Charge[c]	Q_g	V_{GS} = 10 V	V_{DS} = 50 V, I_D = 1.5 A	-	3.6	5.4	nC
Gate-Source Charge[c]	Q_{gs}			-	0.9	-	
Gate-Drain Charge[c]	Q_{gd}			-	1.2	-	
Gate Resistance	R_g	f = 1 MHz		0.9	1.8	2.7	Ω
Turn-On Delay Time[c]	$t_{d(on)}$	V_{DD} = 50 V, R_L = 33 Ω I_D ≅ 2 A, V_{GEN} = 10 V, R_g = 1 Ω		-	5	8	ns
Rise Time[c]	t_r			-	10	15	
Turn-Off Delay Time[c]	$t_{d(off)}$			-	9	14	
Fall Time[c]	t_f			-	6	9	
Source-Drain Diode Ratings and Characteristics[b]							
Pulsed Current[a]	I_{SM}			-	-	8	A
Forward Voltage	V_{SD}	I_F = 1.5 A, V_{GS} = 0 V		-	0.8	1.2	V

Notes