

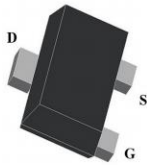
Features

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment*
- Easily designed drive circuits
- Easy to parallel

Application

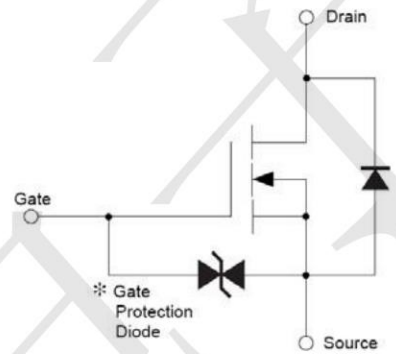
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Package and Pin Configuration



SOT723

Circuit diagram



Marking:DQ

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	0.1	A
R _{θJA}	Thermal Resistance, Junction-to-Ambient	833	°C /W
P _D	Power Dissipation	0.2	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

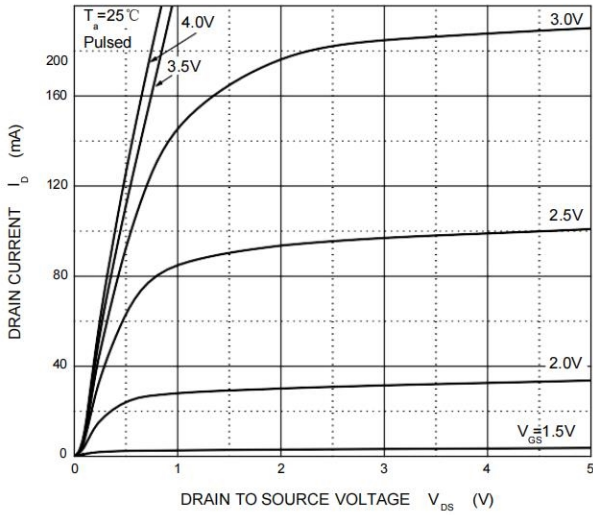
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V_{DS}	$V_{GS} = 0V, I_D = 10\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate –Source leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 2	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 3V, I_D = 100\mu A$	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4V, I_D = 10mA$			8	Ω
		$V_{GS} = 2.5V, I_D = 1mA$			13	Ω
Forward Transconductance	g_{FS}	$V_{DS} = 3V, I_D = 10mA$	20			mS
Dynamic Characteristics*						
Input Capacitance	C_{iss}	$V_{DS} = 5V, V_{GS} = 0V, f = 1MHz$		13		pF
Output Capacitance	C_{oss}			9		pF
Reverse Transfer Capacitance	C_{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 5V,$ $I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega,$		15		ns
Rise Time	t_r			35		ns
Turn-Off Delay Time	$t_{d(off)}$			80		ns
Fall Time	t_f			80		ns

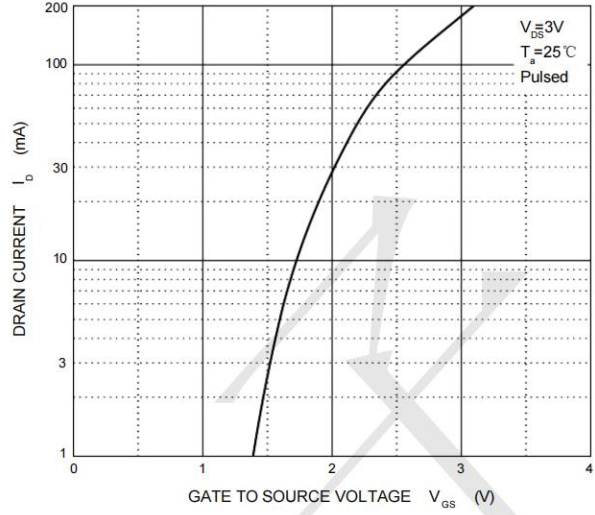


Typical Characteristics

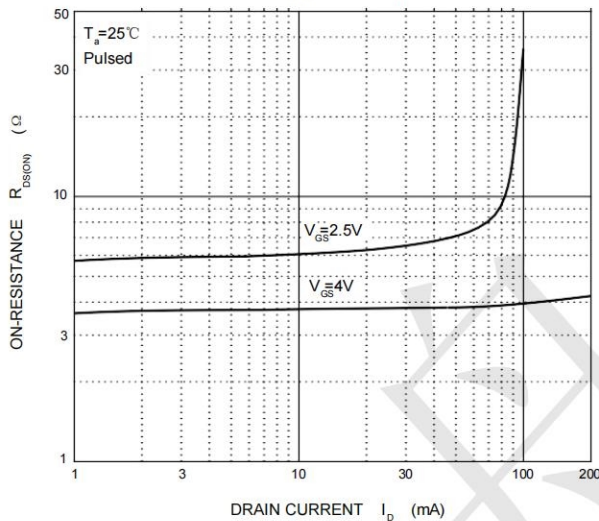
Output Characteristics



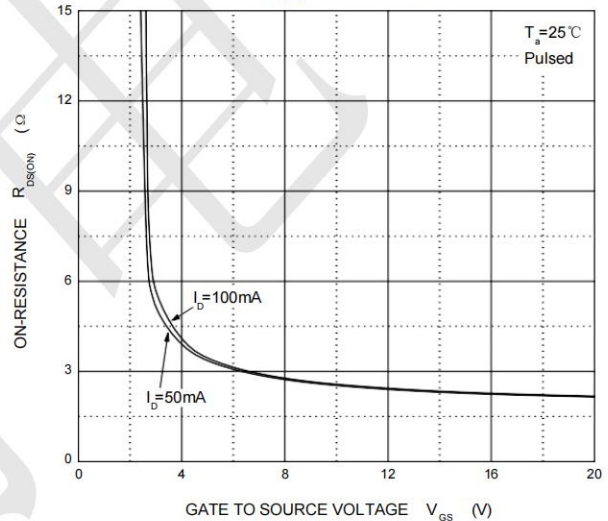
Transfer Characteristics



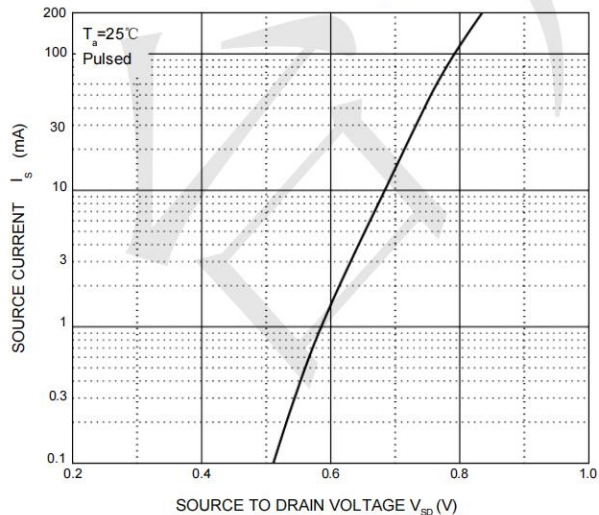
$R_{DS(ON)}$ — I_D



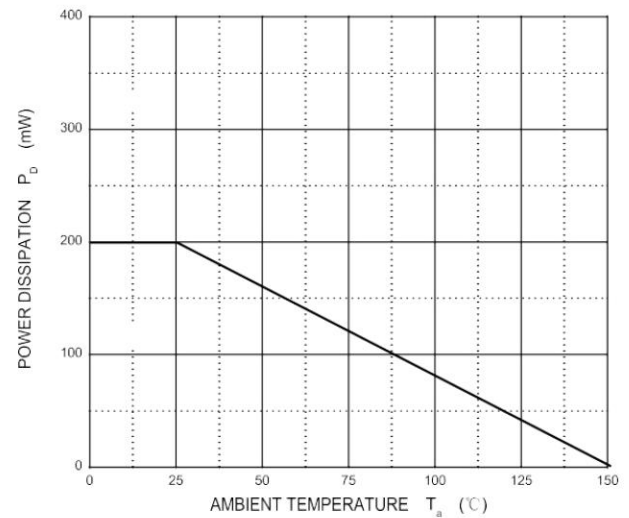
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

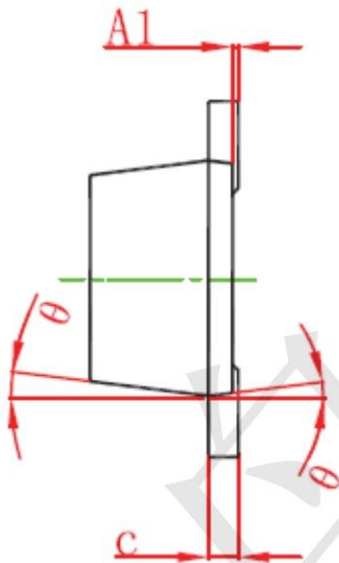
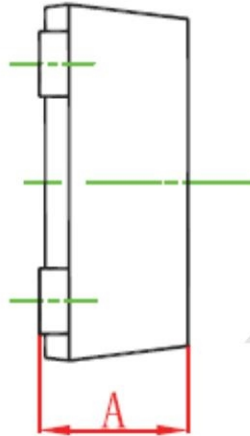
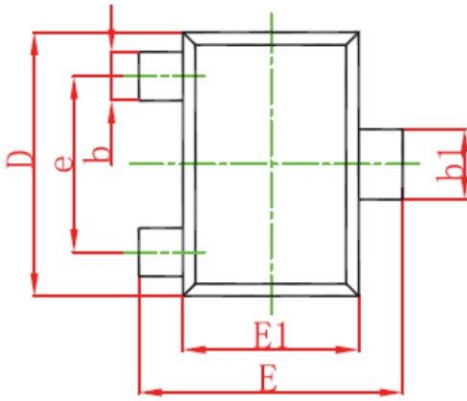


P_D — T_a



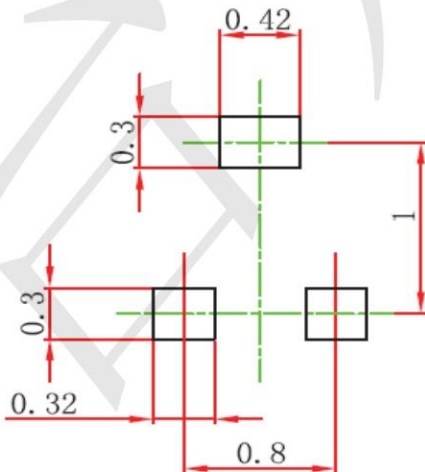


SOT723-Package Outline Drawing



Symbol	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.43	0.50	0.017	0.020
A1	0.00	0.05	0.000	0.002
b	0.17	0.27	0.007	0.011
b1	0.27	0.37	0.011	0.015
c	0.08	0.15	0.003	0.006
D	1.15	1.25	0.045	0.049
E	1.15	1.25	0.045	0.049
E1	0.75	0.85	0.03	0.033
e	0.8 typ		0.031 typ	
θ	7° REF		7° REF	

Suggested Land Pattern



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