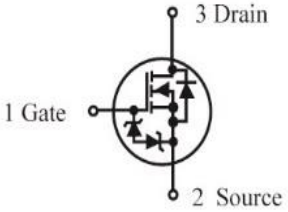
迈拓电子
MAITUO ELECTRONIC

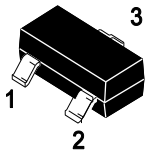
BSS139KT Power MOSFET

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	50	V
Gate–to–Source Voltage – Continuous	VGS	±20	V



FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- Low threshold voltage (VGS(th): 0.5V...1.5V) makes it ideal for low voltage applications.



SOT523

Marking J2

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−4 Board (Note 1) @ TA = 25ºC Derate above 25ºC	PD	225 1.8	mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	° C
Maximum Lead Temperature for Solde Purposes, for 10 seconds	TL	260	ºC

1. FR–4 = 1.0×0.75×0.062 in.

迈拓电子
MAITUO ELECTRONIC

ELECTRICAL CHARACTERISTICS (Ta= 25 ºC)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	VBRDSS	50	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = 25 V) (VGS = 0, VDS = 50 V)	IDSS	- -	- -	0.1 0.5	μA
Gate–Body Leakage Current, Forward (VGS = 20 Vdc)	IGSSF	-	-	10.0	μA
Gate–Body Leakage Current, Reverse (VGS = - 20 V)	IGSSR	-	-	-10	μA

ON CHARACTERISTICS (Note 2)

Gate Threshold Voltage (VDS = VGS, ID = 1.0mA)	VGS(th)	0.5	-	1.5	V
Static Drain–Source On–State Resistance (VGS = 2.75 V, ID < 200 mA, TA = –40°C to +85°C) (VGS = 5.0 V, ID = 200 mA)	RDS(on)	- -	5.6 -	10 3.5	Ohms
Forward Transconductance (VDS = 25 V, ID = 200 mA, f = 1.0 kHz)	gfs	100	-	-	mS

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Ciss	-	22.8	-	pF
Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Coss	-	3.5	-	pF
Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Crss	-	2.9	-	pF

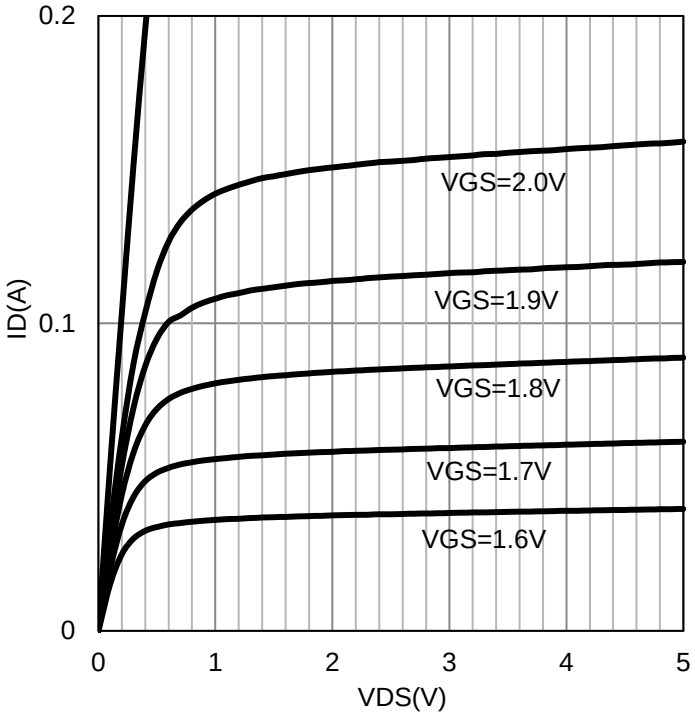
SWITCHING CHARACTERISTICS

Turn-On Delay Time	(VDD = 30 V , VGEN = 10 V,RG =25Ω ,RL =60 Ω,ID =500 mA)	td(on)	-	3.8	-	ns
Turn-Off Delay Time		td(off)	-	19	-	

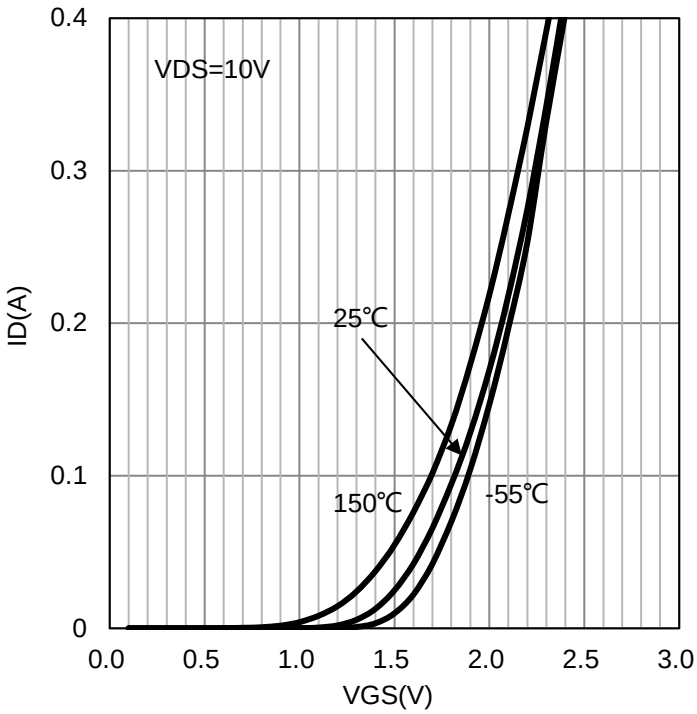
2.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

迈拓电子
MAITUO ELECTRONIC

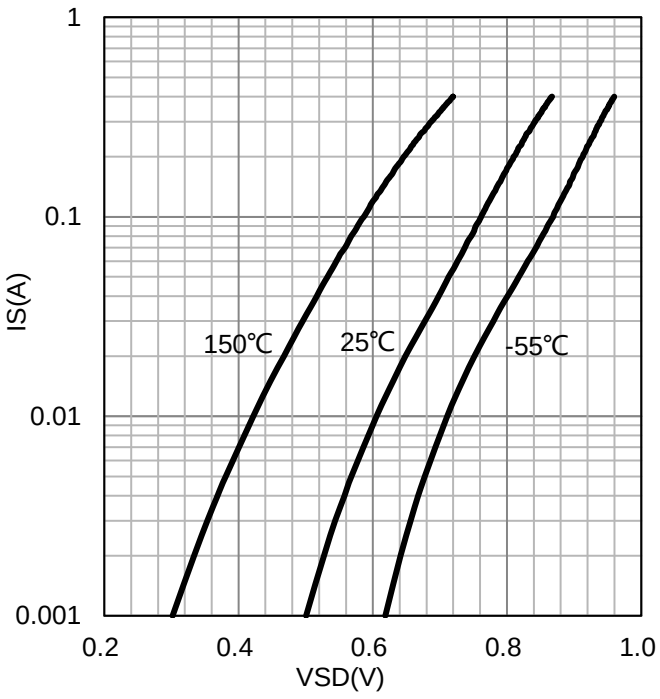
ELECTRICAL CHARACTERISTICS CURVES



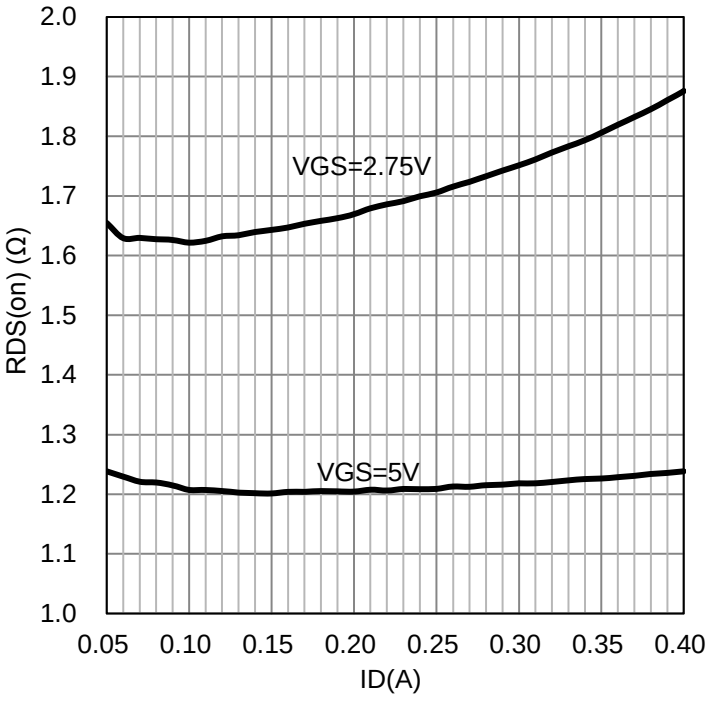
ID vs. VDS



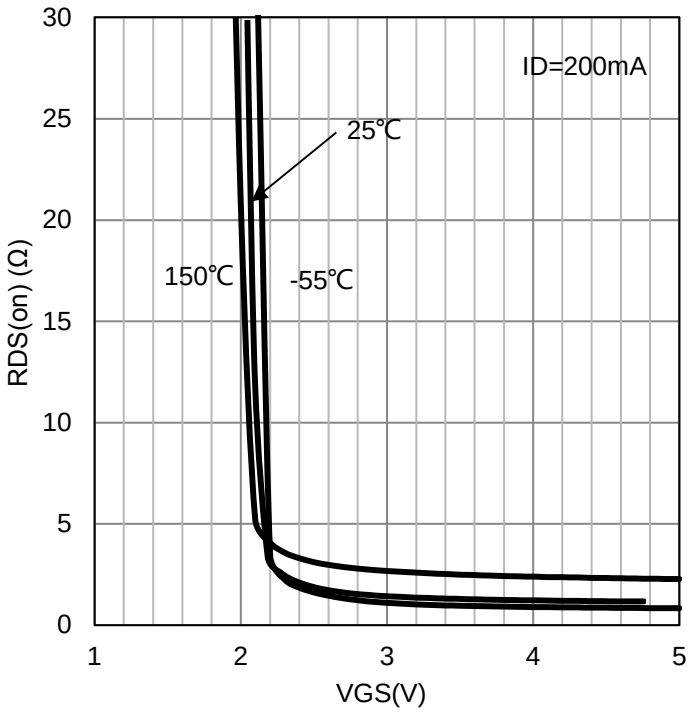
ID vs. VGS



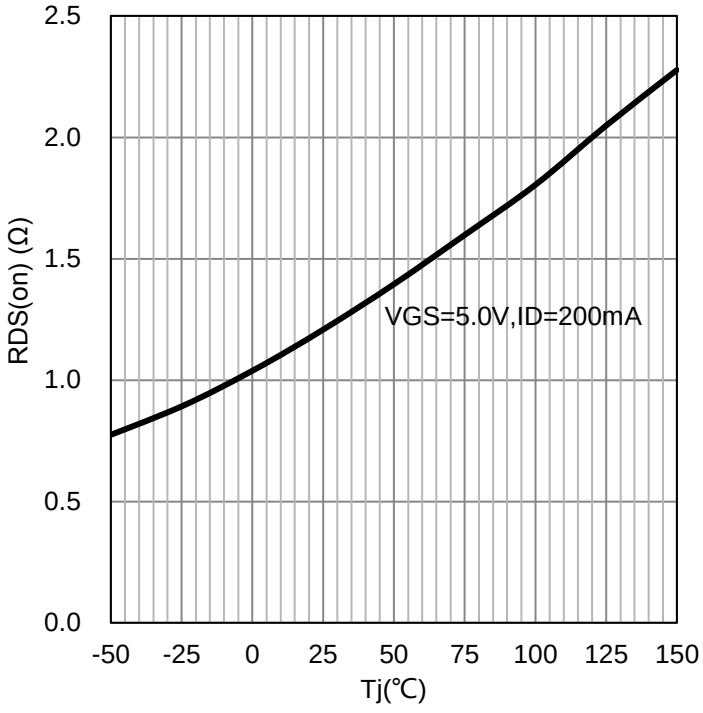
IS vs. VSD



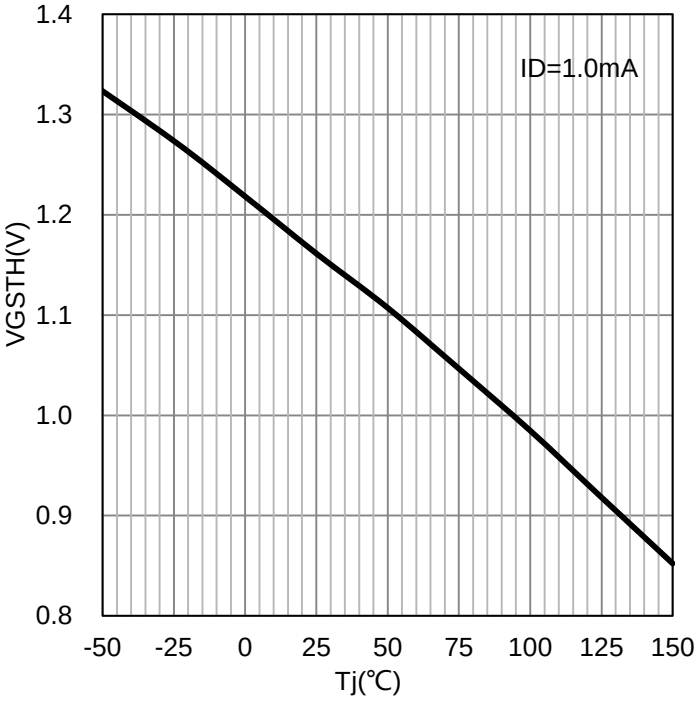
RDS(on) vs. ID



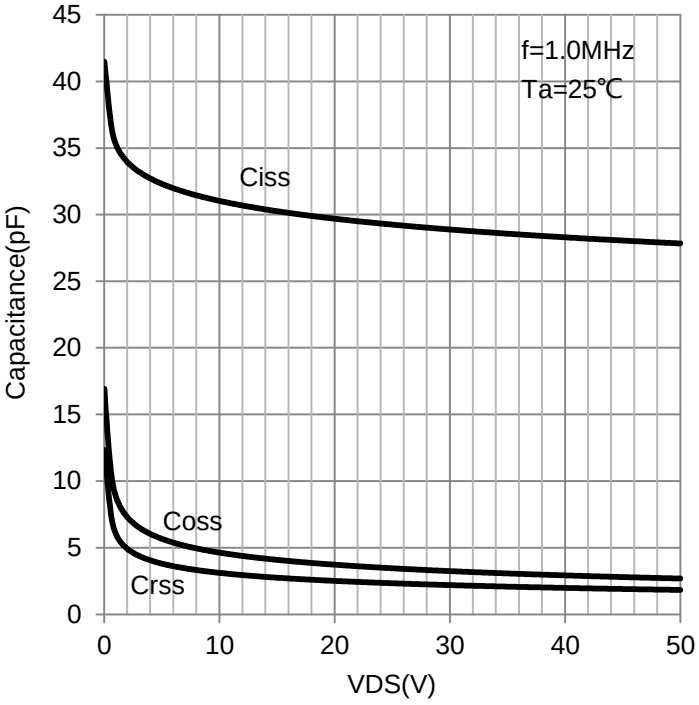
RDS(on) vs. VGS



RDS(on) vs. Tj



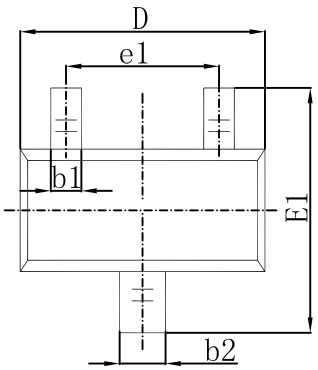
VGSTH vs. Tj

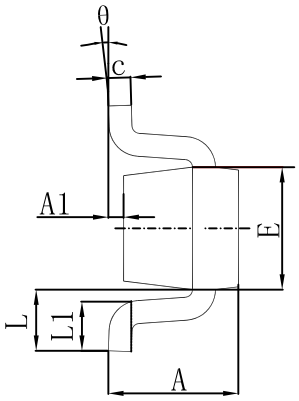


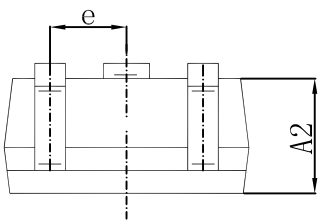
Capacitance

迈拓电子
MAITUO ELECTRONIC

SOT-523 Package Outline Dimensions

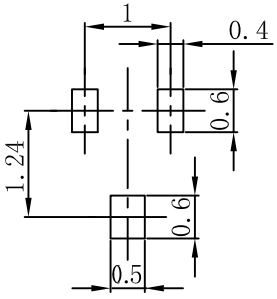






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.