



YEA SHIN TECHNOLOGY CO., LTD

BSS139

N-CHANNEL ENHANCEMENT MOSFET

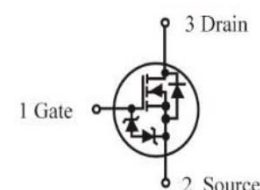
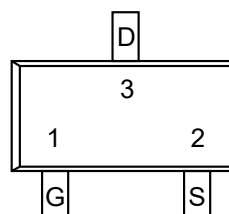
VDS= 50V, ID= 200mA



FEATURES

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- ◆ 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
- ◆ ESD Protected : 1500V
- ◆ Marking : J2



Maximum Ratings @ TA=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	50	V
Gate-to-Source Voltage-Continuous	V _{GSS}	±20	V
Drain Current	Continuous	I _D	200 mA
	Pulsed (tp ≤ 10us)	I _{DM}	800 mA
Total Device Dissipation	P _D	225	mW
Thermal Resistance Junction to Ambient	R _{θJA}	556	°C/W
Junction and Storage Temperature Range	T _J , T _{stg}	-55 to +150	°C
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	T _L	260	°C

Electrical Characteristics @ TA=25°C unless otherwise specified, per element

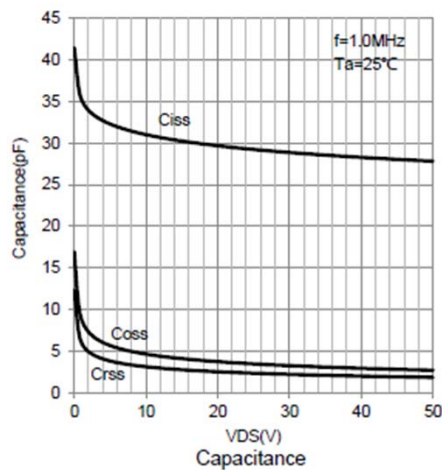
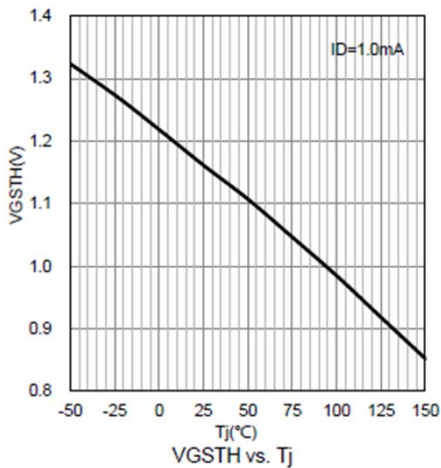
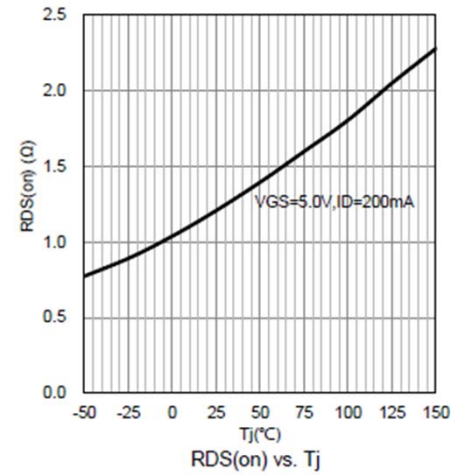
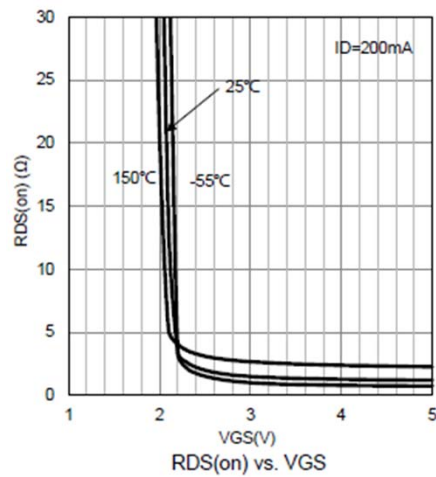
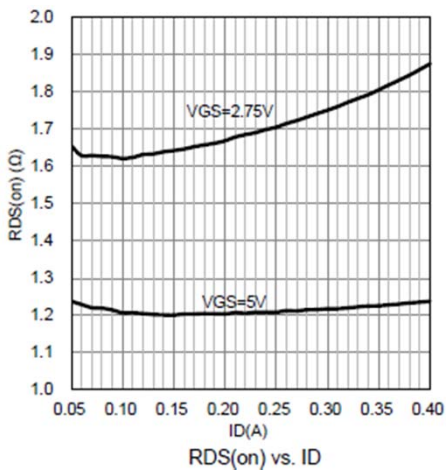
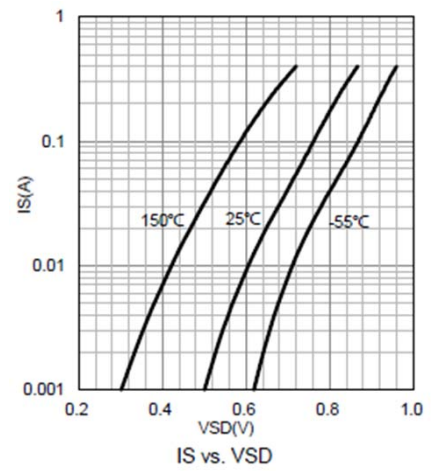
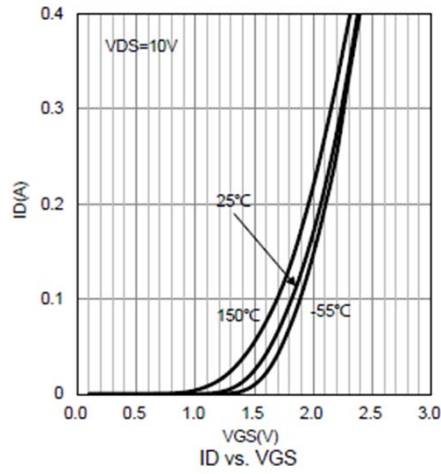
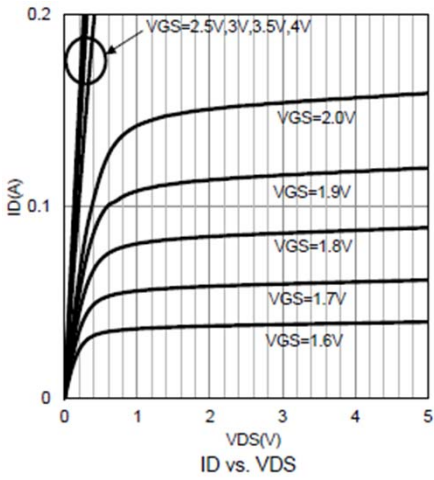
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	50	-	-	V	V _{GS} =0V, I _D =250μA
Zero Gate Voltage Drain Current	I _{DSS}	-	-	0.1	uA	V _{DS} =25V, V _{GS} =0V
		-	-	0.5		V _{DS} =50V, V _{GS} =0V
Gate-source Leakage	I _{GSS}	-	-	±10	uA	V _{GS} =±20V
ON CHARACTERISTICS (NOTE 1)						
Gate Threshold Voltage	V _{GS(th)}	0.5	-	1.5	V	V _{DS} =V _{GS} , I _D =1mA
Static Drain-Source On-Resistance	R _{DS(ON)}	-	-	3.5	Ω	V _{GS} =5V, I _D =200mA
Forward Transconductance	g _{fs}	100	-	-	mS	V _{DS} =25V, I _D =200mA
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	-	22.8	-	pF	V _{DS} =25V V _{GS} =0V f=1.0MHz
Output Capacitance	C _{oss}	-	3.5	-	pF	
Reverse Transfer Capacitance	C _{rss}	-	2.9	-	pF	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	T _{D(ON)}	-	3.8	-	nS	I _D =500mA, V _{DD} =30V V _{GEN} =10V, R _L =60Ω, R _G =25Ω
Turn-Off Delay Time	T _{D(OFF)}	-	19	-	nS	

NOTES :

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

DEVICE CHARACTERISTICS

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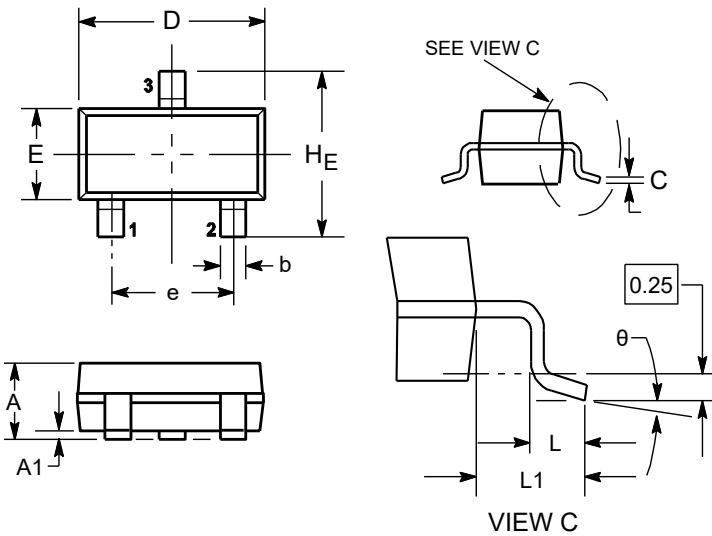
PACKAGE OUTLINE & DIMENSIONS

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Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

Soldering Footprint

