

## BW3402

### N-Channel 30-V Enhancement-Mode MOSFETs

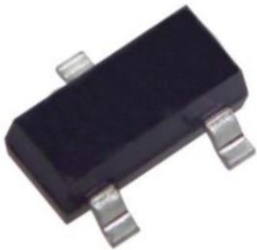
#### Mechanical Data

- Case: SOT-23 Molded plastic
- Epoxy: UL94V-O rate flame retardant
- RoHS compliant package

Package type : SOT-23

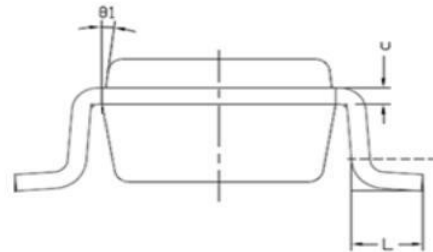
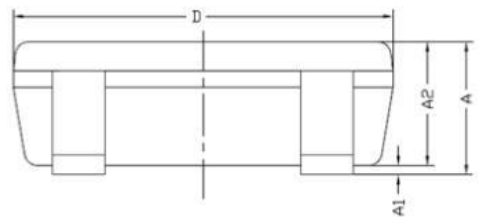
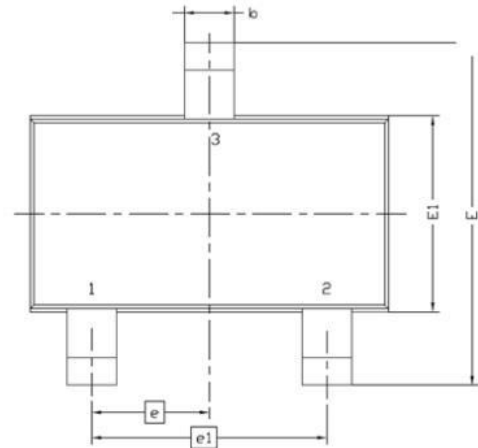
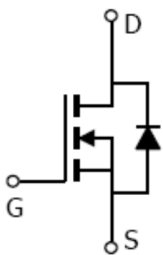
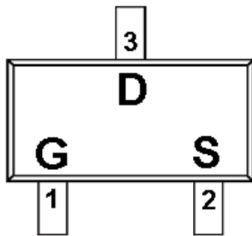
#### Packing & Order Information

3,000/Reel



**RoHS  
COMPLIANT**

Graphic symbol



Symbol	MILLIMETERS	
	MIN	MAX
A	0.8	1.2
A1	0	0.1
A2	0.7	1.1
b	0.3	0.5
c	0.1	0.2
D	2.7	3.1
E	2.6	3
E1	1.4	1.8
e	0.95 BSC	
e1	1.9 BSC	
L	0.3	0.6
θ1	7° NOM	

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#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

##### Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	BW3402	Unit
Drain-Source Voltage	BV <sub>DSS</sub>	30	V
Gate- Source Voltage	V <sub>GS</sub>	12	V
Drain Current (continuous)	I <sub>D</sub>	4.6	A
Drain Current (pulsed)	I <sub>DM</sub>	16	A
Thermal resistance, junction to ambient air	PD	1380	mW
Junction	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

##### Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	Min	Typ.	Max.	Units
Drain-Source Breakdown Voltage (I <sub>D</sub> = 250uA, V <sub>GS</sub> = 0 V)	BV <sub>DSS</sub>	30		--	V
Gate Threshold Voltage (I <sub>D</sub> = 250uA, V <sub>GS</sub> = V <sub>DS</sub> )	V <sub>GS(th)</sub>	0.7		18	V
Diode Forward Voltage Drop (I <sub>S</sub> = 1 A, V <sub>GS</sub> = 0 V)	V <sub>SD</sub>	--		1	V
Zero Gate Voltage Drain Current (V <sub>GS</sub> =0V, V <sub>DS</sub> = 24V) (V <sub>GS</sub> =0V, V <sub>DS</sub> = 24V, T <sub>A</sub> =55°C)	I <sub>DSS</sub>			1 5	uA

##### Maximum Ratings (Tc=25°C unless otherwise noted)

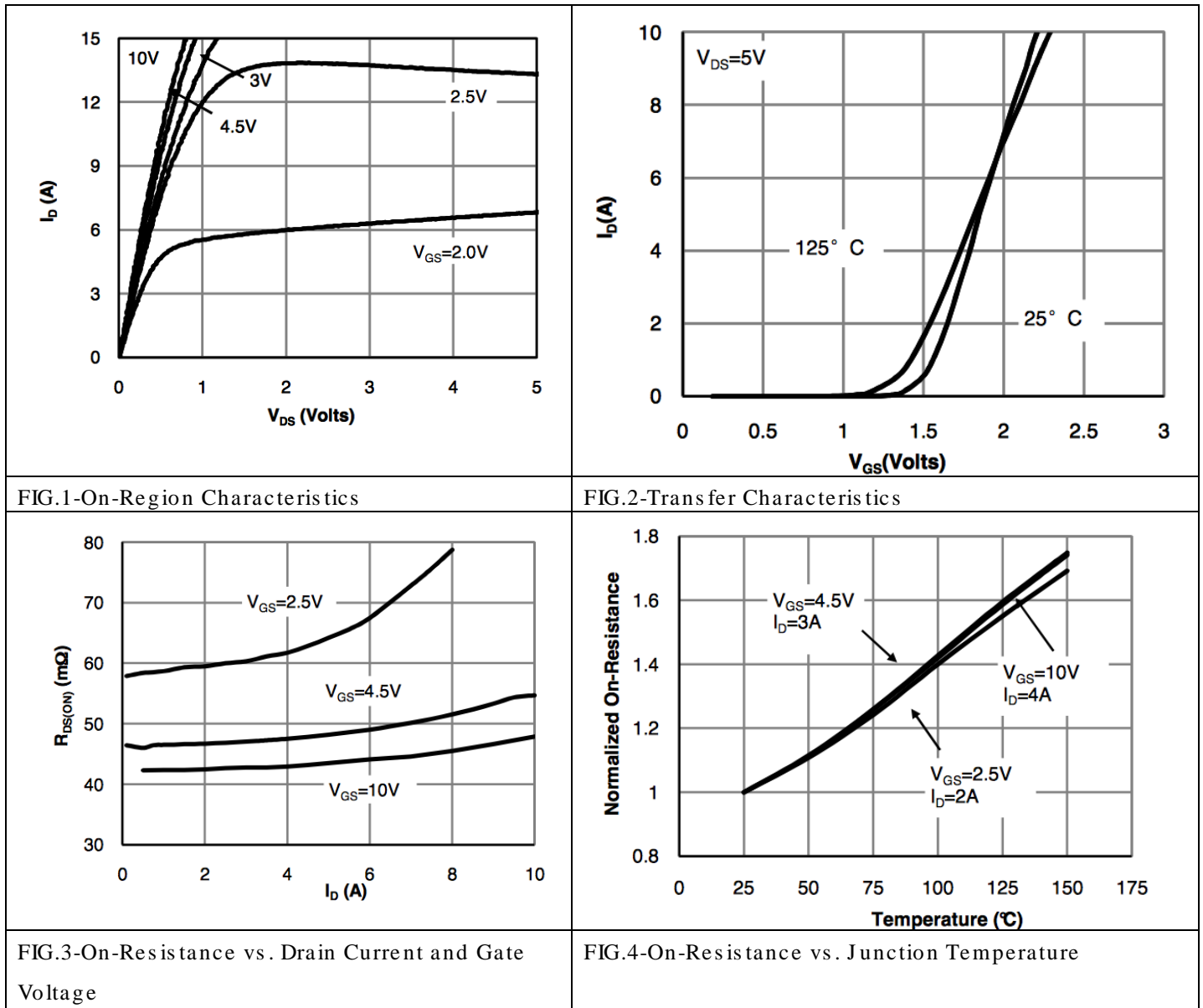
Parameter	Symbol	Min	Typ.	Max.	Units
Gate Body Leakage (V <sub>GS</sub> =+12 V, V <sub>DS</sub> = 0 V)	I <sub>GSS</sub>	--		+/-100	nA
Static Drain-Source On-State Resistance (I <sub>D</sub> = 4.6 A, V <sub>GS</sub> = 10 V)	R <sub>DS(ON)</sub>	--		30	mΩ
Static Drain-Source On-State Resistance (I <sub>D</sub> = 4 A, V <sub>GS</sub> = 4.5 V)		--		50	mΩ
Static Drain-Source On-State Resistance (I <sub>D</sub> = 1 A, V <sub>GS</sub> = 2.5 V)				100	pF
Input Capacitance (V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 15 V, f = 1MHz)	C <sub>ISS</sub>		954	--	pF
Output Capacitance (V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 15 V, f = 1MHz)	C <sub>OSS</sub>		115	--	pF
Turn-ON Time (V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 10 V, R <sub>GEN</sub> = 6 Ω)	t(on)		6.3	--	ns
Turn-OFF Time (V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 10 V, R <sub>GEN</sub> = 6 Ω)	t(off)	--	38.2	--	ns

Pulse Width<300μs; Duty Cycle<2.0%

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#### Characteristics Curve



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### N-Channel 30-V Enhancement-Mode MOSFETs

#### Characteristics Curves

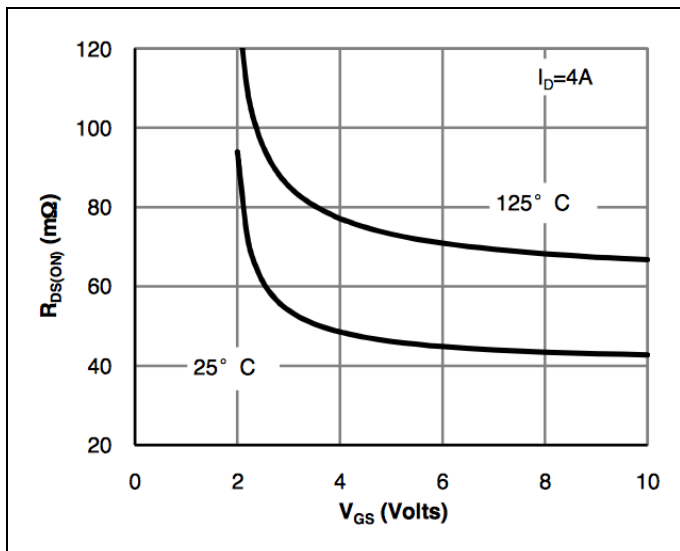


FIG.5-On-Resistance vs. Gate-Source Voltage

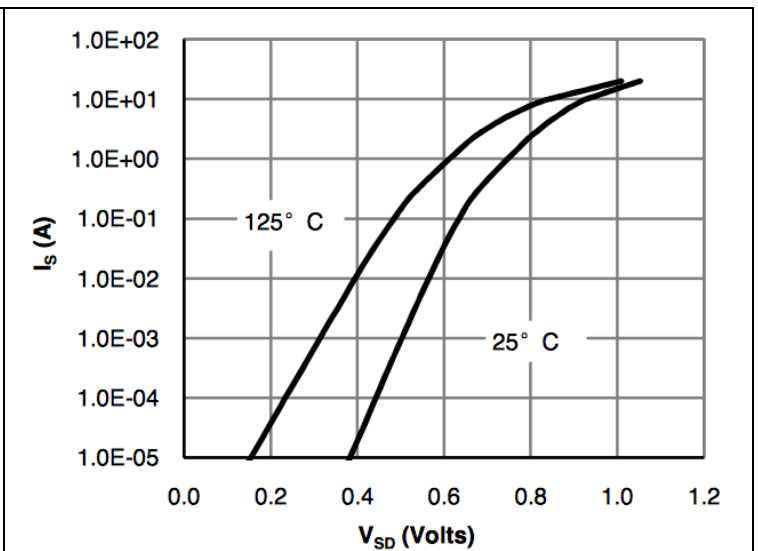


FIG.6-Body-Diode Characteristics

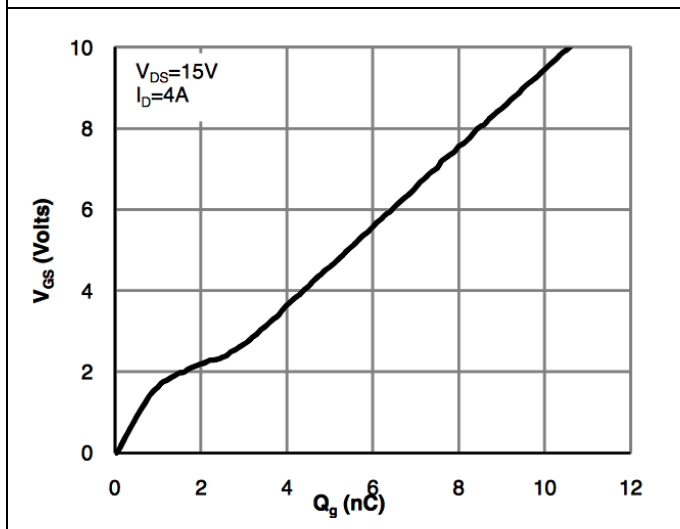


FIG.7-Gate-Charge Characteristics

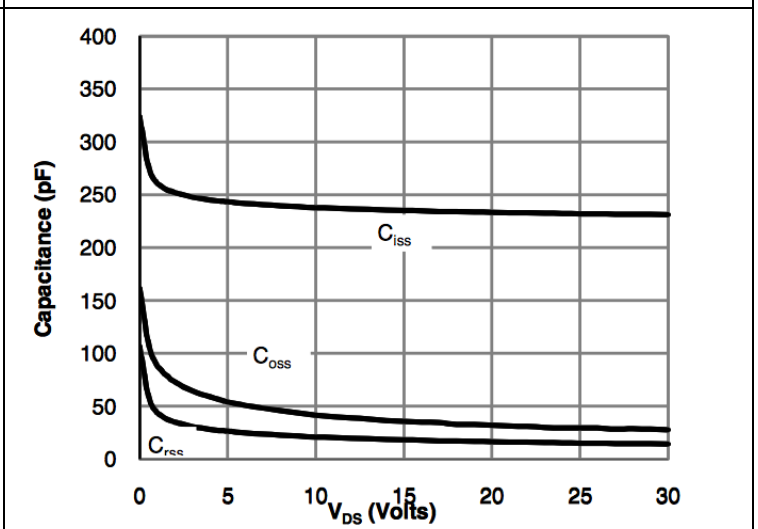


FIG.8-Capacitance Characteristics

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