



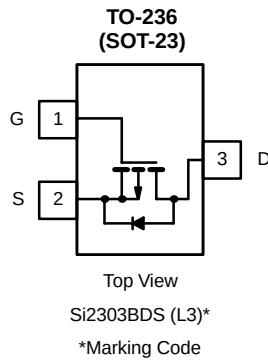
New Product

Si2303BDS
Vishay Siliconix

P-Channel, 30-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A) ^b
-30	0.200 @ $V_{GS} = -10$ V	-1.4
	0.380 @ $V_{GS} = -4.5$ V	-1.0



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V _{DS}	-30		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current (T _J = 150°C) ^b	T _A = 25°C	I _D	- 1.4	-1.3	A
	T _A = 70°C		-1.1	-1.0	
Pulsed Drain Current ^a		I _{DM}	-10		
Continuous Source Current (Diode Conduction) ^b		I _S	-0.75	-0.6	
Power Dissipation ^b	T _A = 25°C	P _D	0.9	0.7	W
	T _A = 70°C		0.57	0.45	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^b	R_{thJA}	120	145	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^c		140	175	

Notes

- Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board, $t \leq 5$ sec.
- Surface Mounted on FR4 Board.

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

SPECIFICATIONS (T_J = 25° C UNLESS OTHERWISE NOTED)

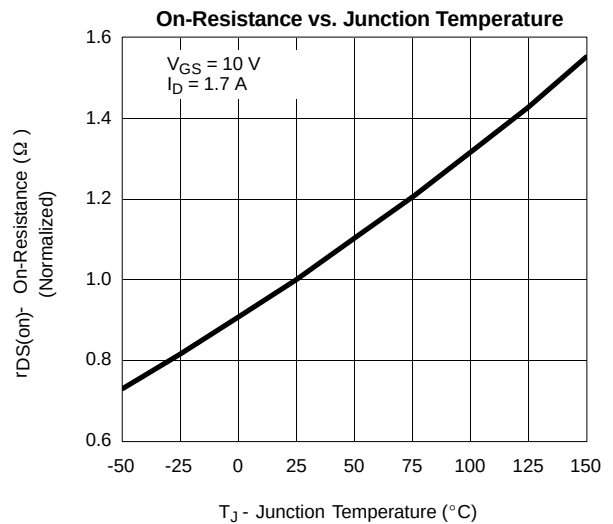
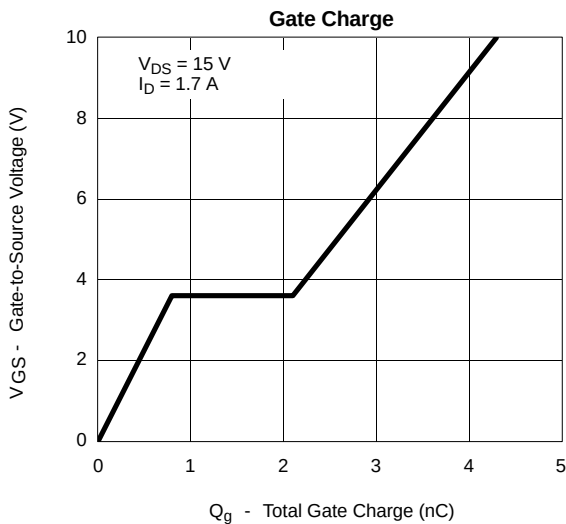
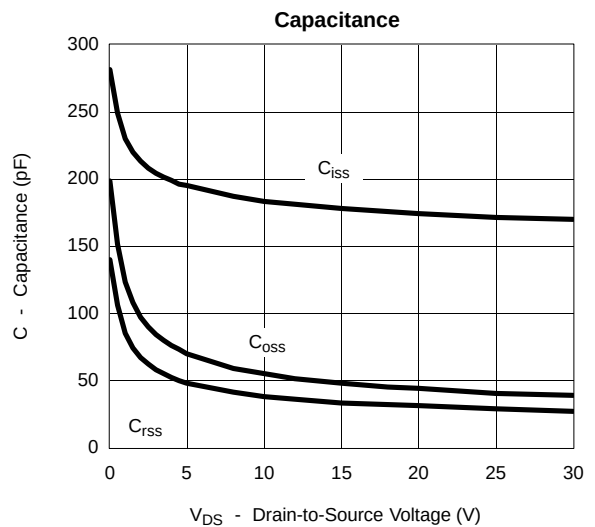
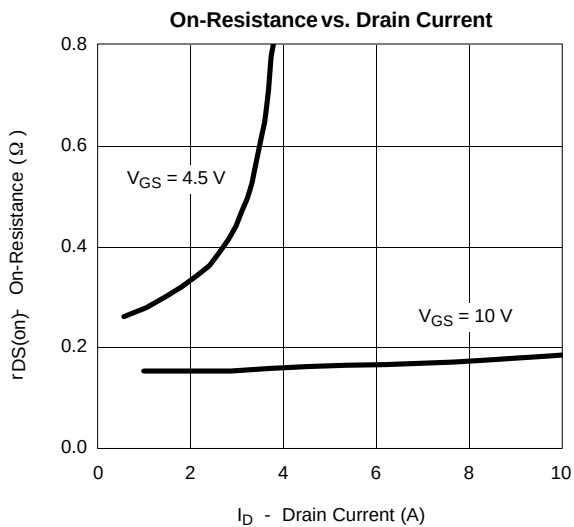
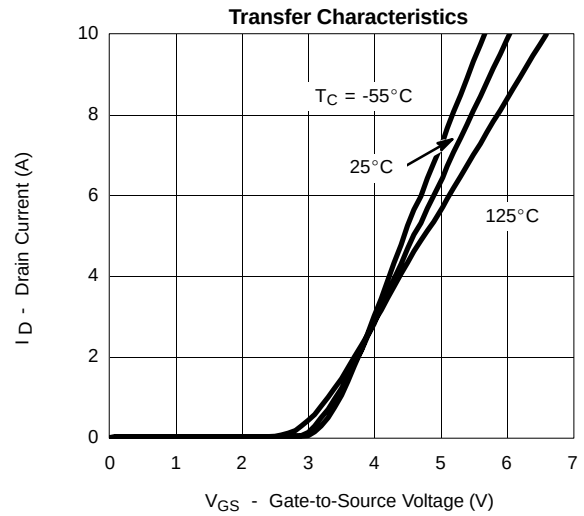
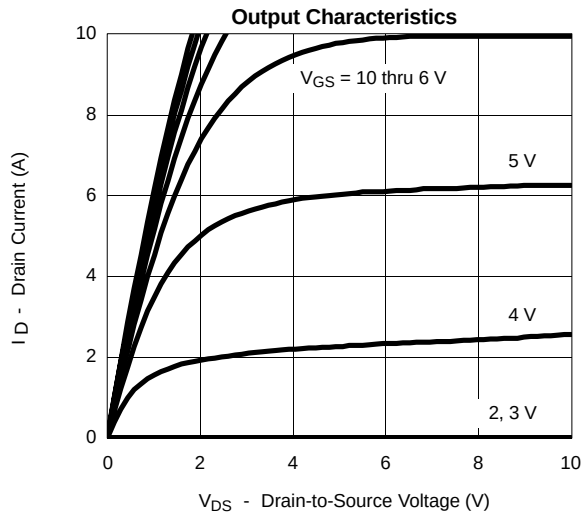
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -10 μA	-30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-1.0		-3.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30 V, V _{GS} = 0 V			-1	μA
		V _{DS} = -30 V, V _{GS} = 0 V, T _J = 55°C			-10	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≤ -5 V, V _{GS} = -10 V	-6			A
Drain-Source On-Resistance ^a	r _{DS(on)}	V _{GS} = -10 V, I _D = -1.7 A		0.150	0.200	Ω
		V _{GS} = -4.5 V, I _D = -1.3 A		0.285	0.380	
Forward Transconductance ^a	g _{fs}	V _{DS} = -5 V, I _D = -1.7 A		2.0		S
Diode Forward Voltage	V _{SD}	I _S = -0.75 A, V _{GS} = 0 V		-0.85	-1.2	V
Dynamic ^b						
Total Gate Charge	Q _g	V _{DS} = -15 V, V _{GS} = -10 V I _D ≅ -1.7 A		4.3	10	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.3		
Input Capacitance	C _{iss}	V _{DS} = -15 V, V _{GS} = 0, f = 1 MHz		180		pF
Output Capacitance	C _{oss}			50		
Reverse Transfer Capacitance	C _{rss}			35		
Switching ^c						
Turn-On Time	t _{d(on)}	V _{DD} = -15 V, R _L =15 Ω I _D ≅ -1.0 A, V _{GEN} = -4.5 V R _G = 6 Ω		55	80	ns
	t _r			40	60	
Turn-Off Time	t _{d(off)}			10	20	
	t _f			10	20	

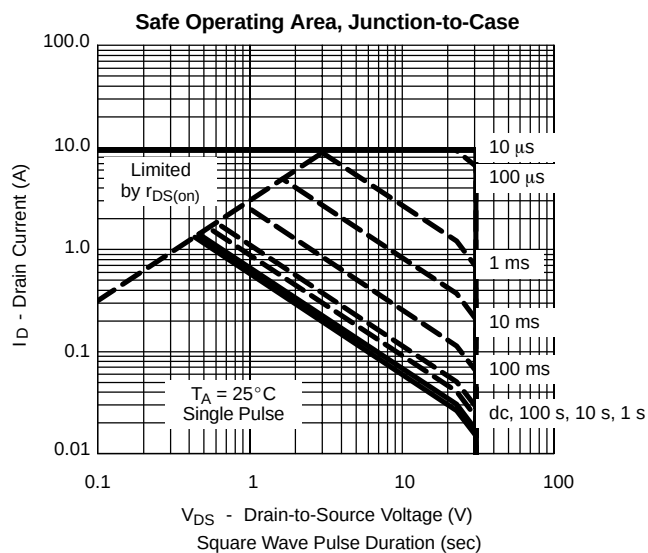
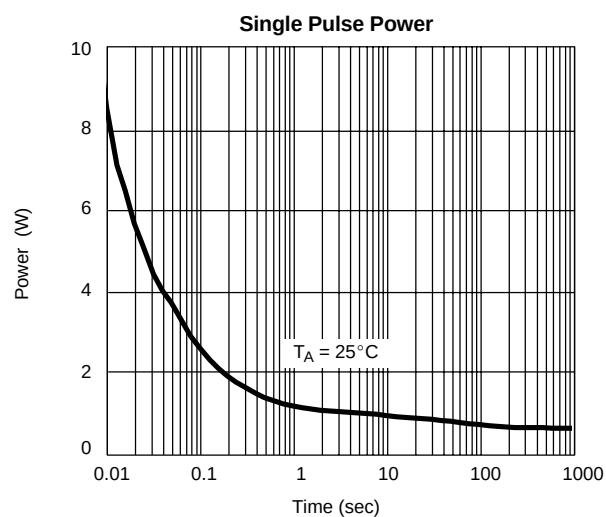
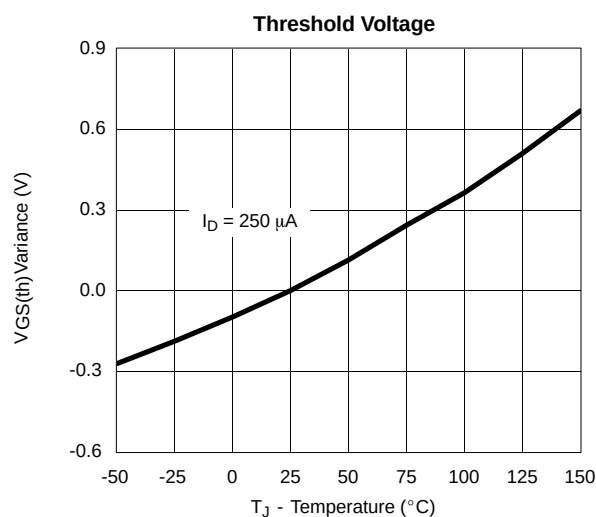
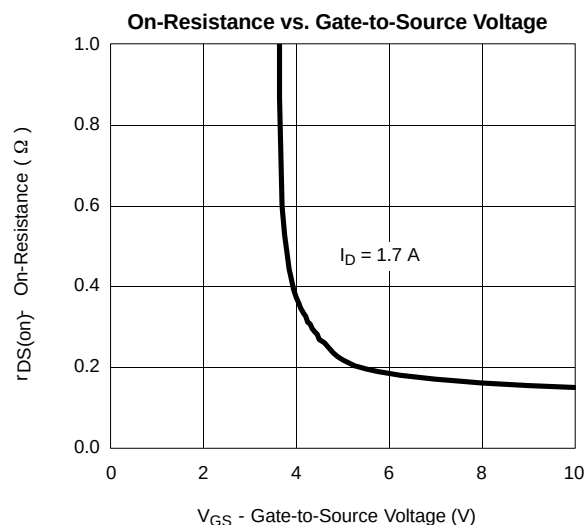
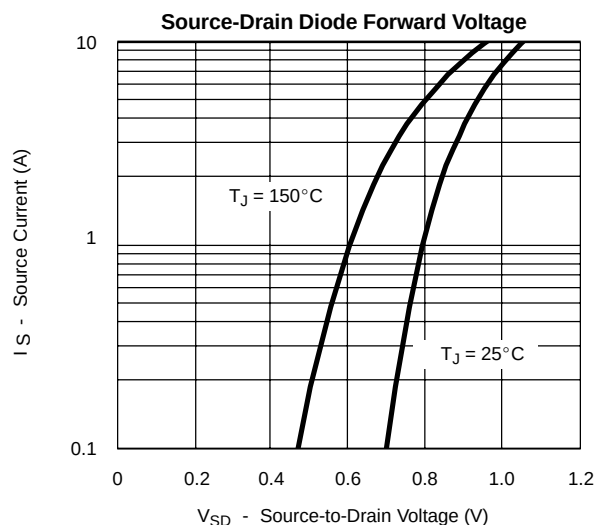
Notes

- a. Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.
b. For DESIGN AID ONLY, not subject to production testing.
c. Switching time is essentially independent of operating temperature. • FaxBack 408-970-5600



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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