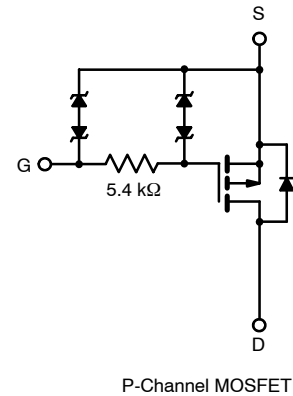
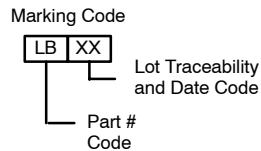
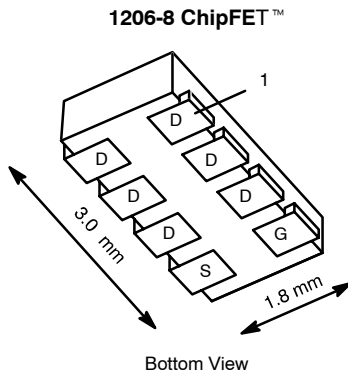




P-Channel 20-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-20	0.062 @ $V_{GS} = -4.5$ V	-5.1
	0.068 @ $V_{GS} = -3.6$ V	-4.9
	0.085 @ $V_{GS} = -2.5$ V	-4.4
	0.120 @ $V_{GS} = -1.8$ V	-3.7



Ordering Information: Si5463EDC-T1

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	5 secs	Steady State
Drain-Source Voltage		V_{DS}	-20	
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	-5.1	-3.8
	$T_A = 85^\circ\text{C}$		-3.7	-2.7
Pulsed Drain Current		I_{DM}	-15	
Continuous Source Current ^a		I_S	-1.9	-1.0
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	2.3	1.25
	$T_A = 85^\circ\text{C}$		1.2	0.65
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	
Soldering Recommendations (Peak Temperature) ^{c, d}			260	

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Typical	Maximum
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	45	55
	Steady State		84	100
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	20	25

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- When using HBM. The MM rating is 300 V
- See Reliability Manual for profile. The ChipFET is a leadless package. The end of the lead terminal is exposed copper (not plated) as a result of the singulation process in manufacturing. A solder fillet at the exposed copper tip cannot be guaranteed and is not required to ensure adequate bottom side solder interconnection.
- Rework Conditions: manual soldering with a soldering iron is not recommended for leadless components.

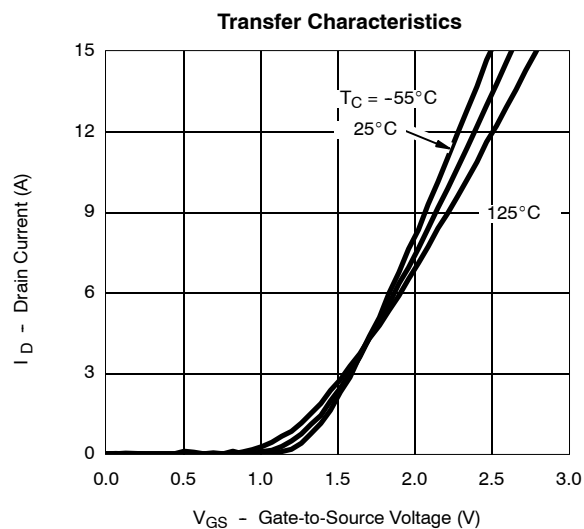
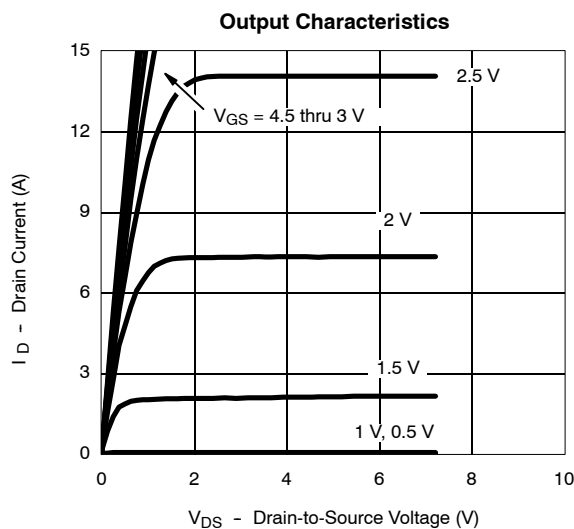
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 4.5\ \text{V}$			± 1.5	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16\ \text{V}, V_{GS} = 0\ \text{V}$			-1	
		$V_{DS} = -16\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 85^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \leq -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-15			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -4.0\ \text{A}$		0.051	0.062	Ω
		$V_{GS} = -3.6\ \text{V}, I_D = -3.5\ \text{A}$		0.056	0.068	
		$V_{GS} = -2.5\ \text{V}, I_D = -3.0\ \text{A}$		0.070	0.085	
		$V_{GS} = -1.8\ \text{V}, I_D = -1.5\ \text{A}$		0.100	0.120	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -5\ \text{V}, I_D = -4.0\ \text{A}$		10		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.0\ \text{A}, V_{GS} = 0\ \text{V}$		-0.75	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -4.0\ \text{A}$		9.7	15	nC
Gate-Source Charge	Q_{gs}			2.7		
Gate-Drain Charge	Q_{gd}			1.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		1.85	2.5	μs
Rise Time	t_r			3.2	4.5	
Turn-Off Delay Time	$t_{d(off)}$			1.9	2.5	
Fall Time	t_f			3.2	4.5	

Notes

a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

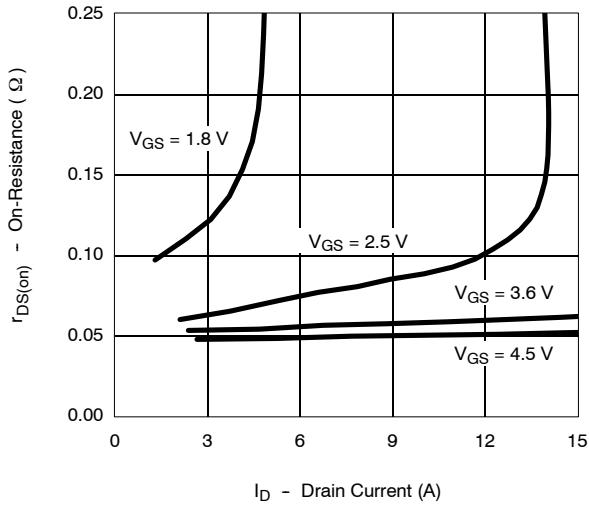
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

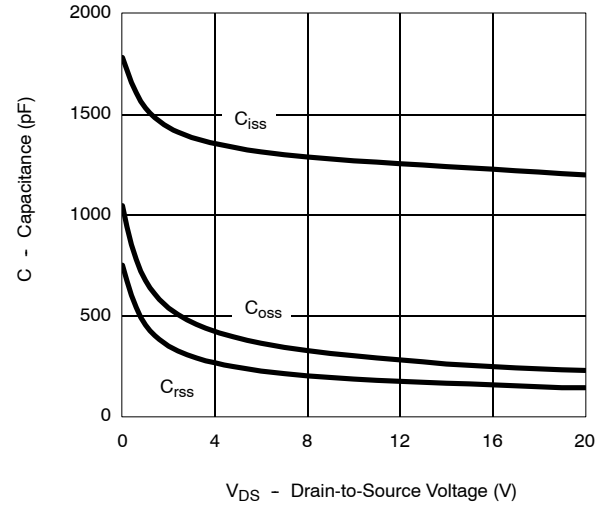


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

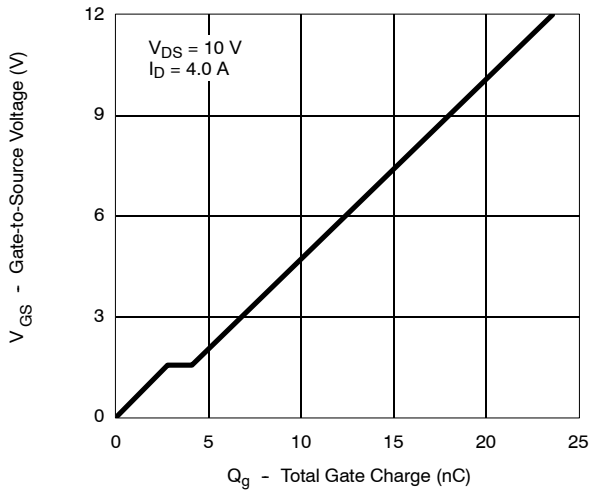
On-Resistance vs. Drain Current



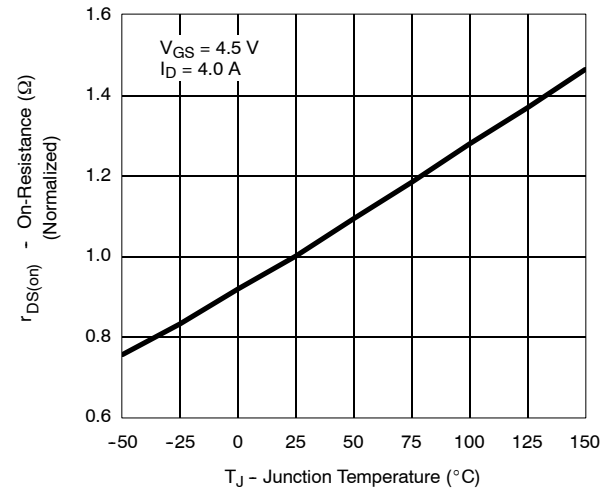
Capacitance



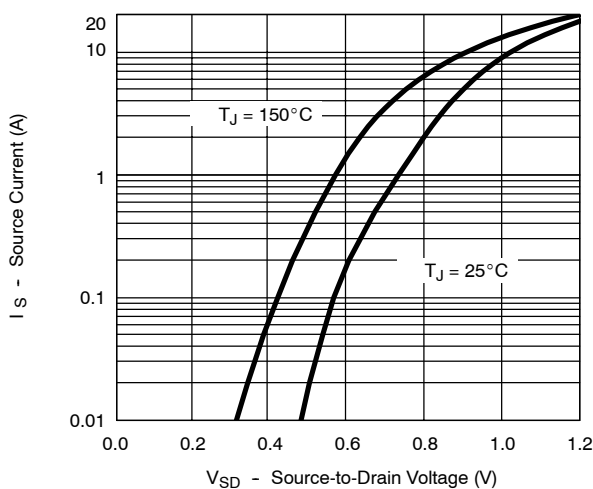
Gate Charge



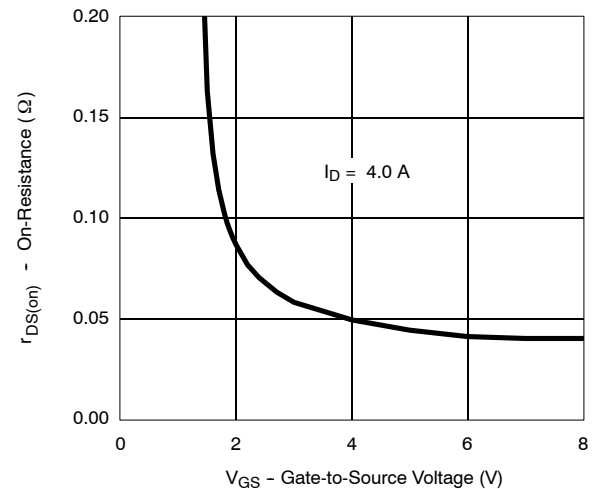
On-Resistance vs. Junction Temperature



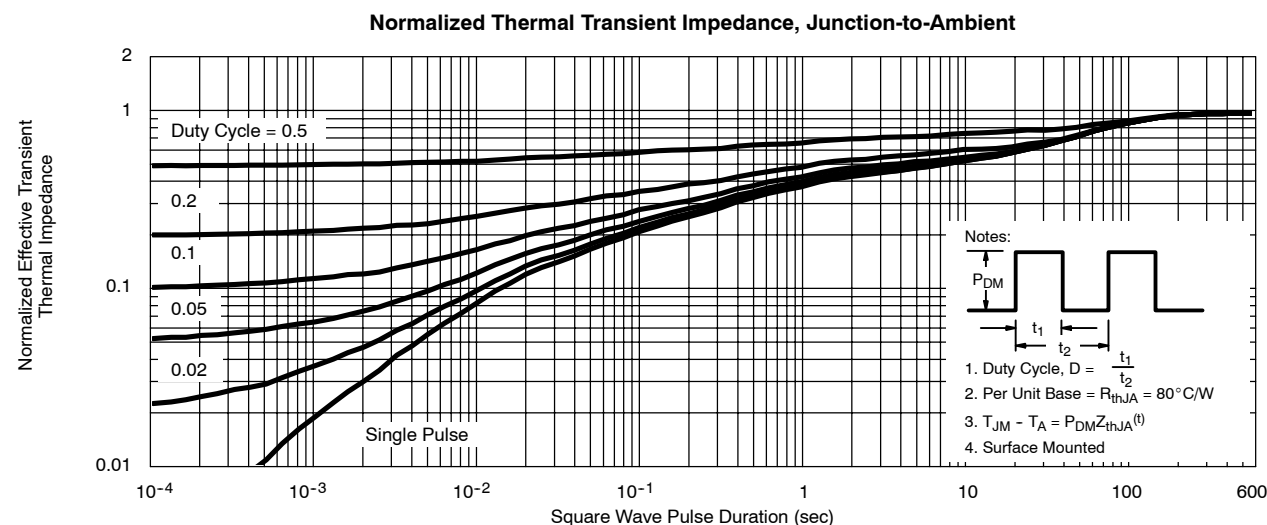
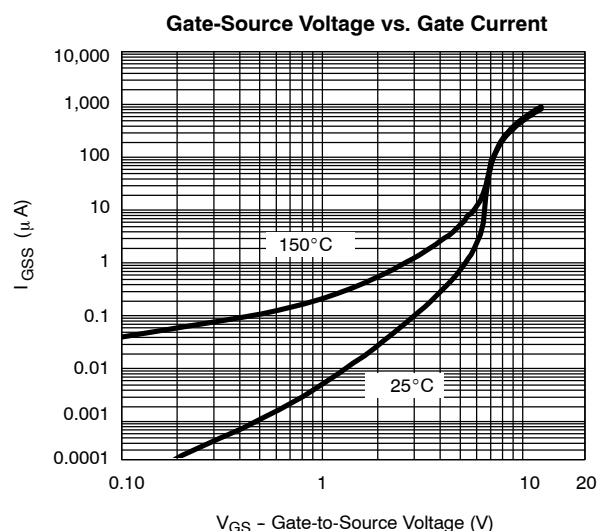
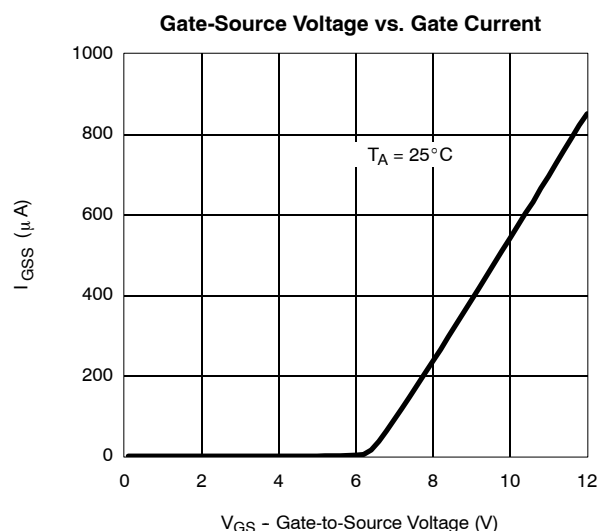
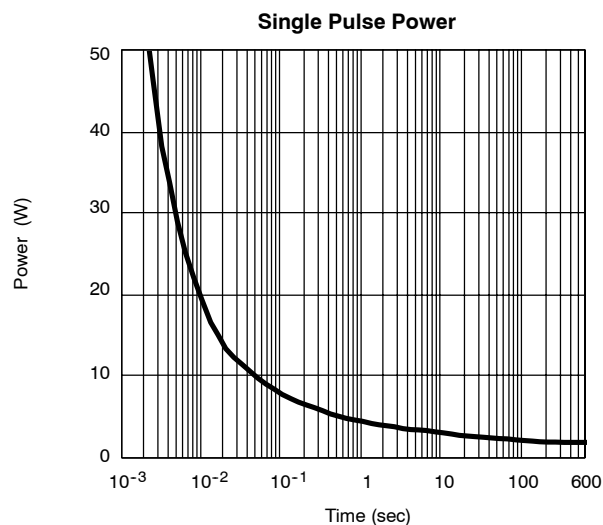
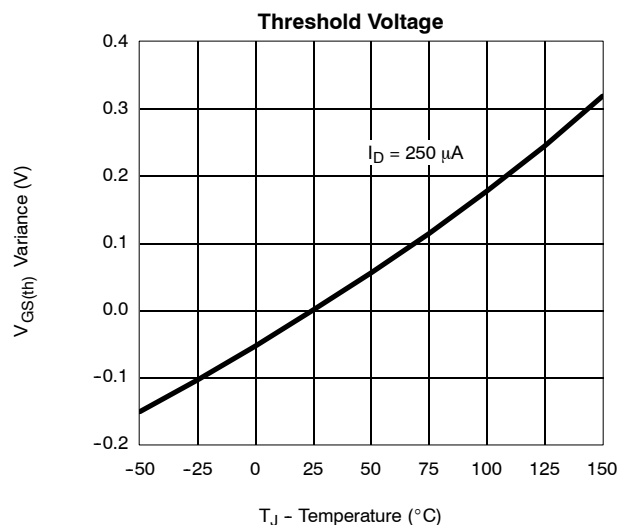
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

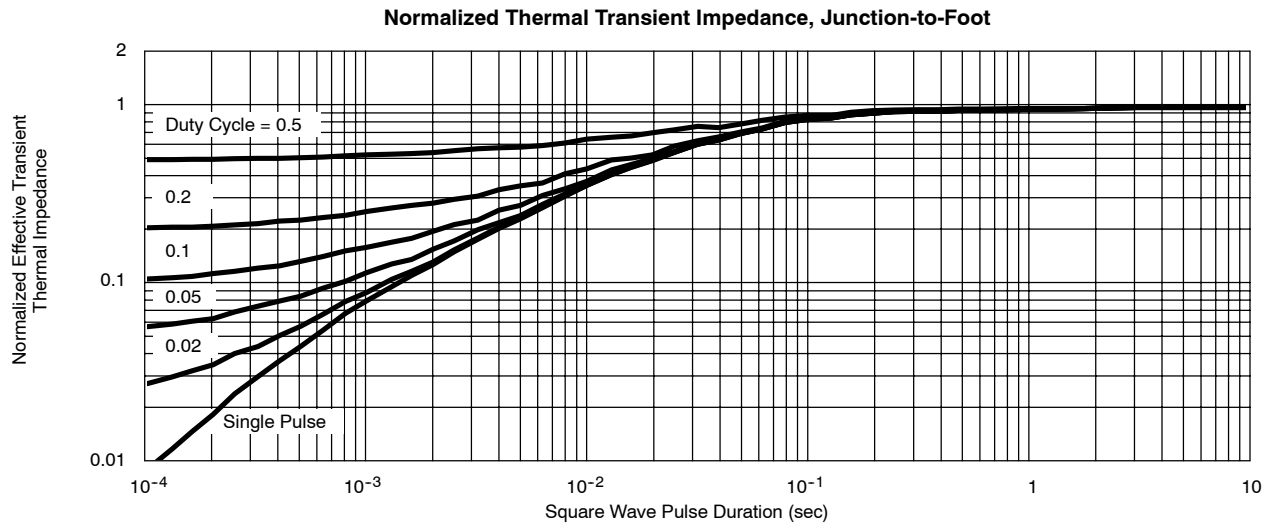


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.