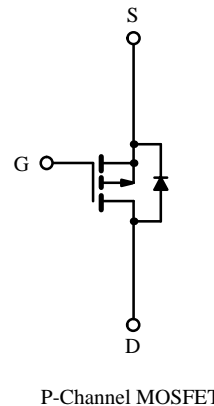
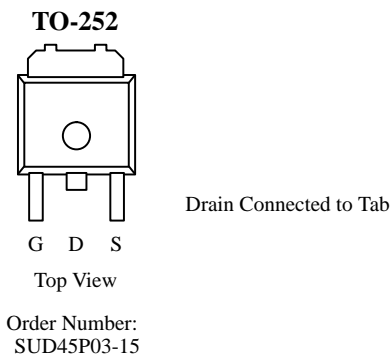


P-Channel 30-V (D-S), 150°C MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A) ^a
-30	0.015 @ $V_{GS} = -10$ V	± 13
	0.024 @ $V_{GS} = -4.5$ V	± 8

TrenchFET™
Power MOSFETs



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V_{DS}	-30	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current ^b	I_D	$T_A = 25^\circ\text{C}$	± 13	A
		$T_A = 100^\circ\text{C}$	± 8	
Pulsed Drain Current	I_{DM}	± 100		
Continuous Source Current (Diode Conduction)	I_S	-13		
Maximum Power Dissipation ^b	P_D	$T_C = 25^\circ\text{C}$	70	W
		$T_A = 25^\circ\text{C}$	4 ^a	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$	

Thermal Resistance Ratings

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^b	R_{thJA}		30	$^\circ\text{C/W}$
Maximum Junction-to-Case	R_{thJC}		1.8	

Notes

- Calculated Rating for $T_A = 25^\circ\text{C}$, for comparison purposes only. This cannot be used as continuous rating (see Absolute Maximum Ratings and Typical Characteristics).
- Surface Mounted on FR4 Board, $t \leq 10$ sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70267.

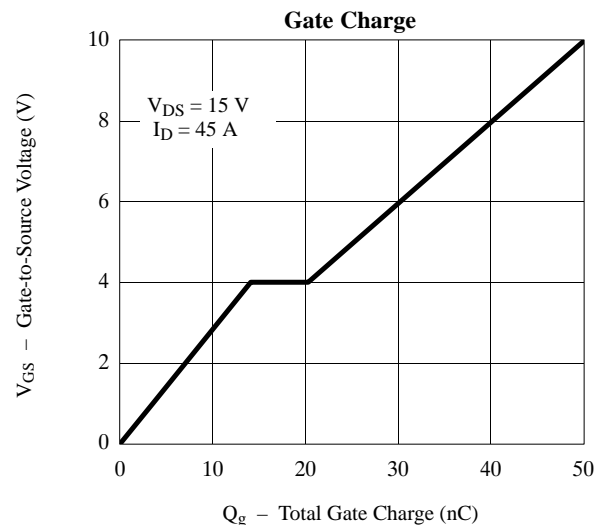
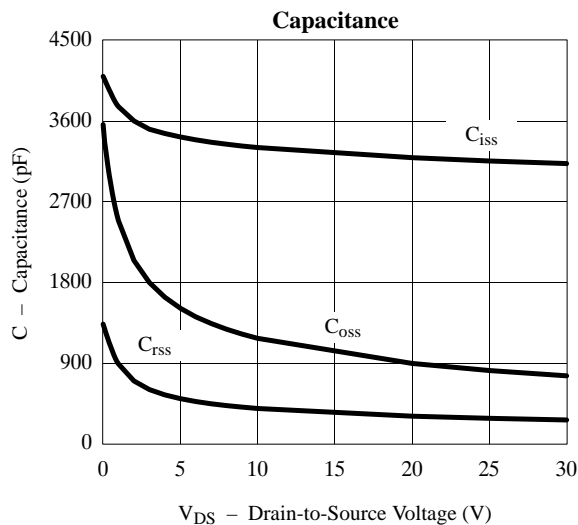
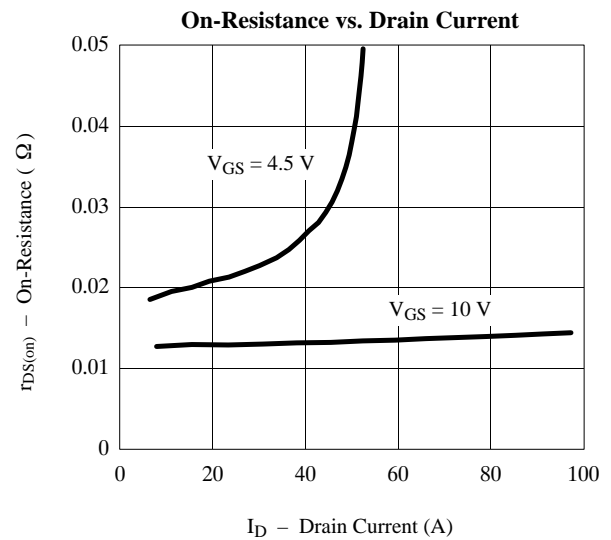
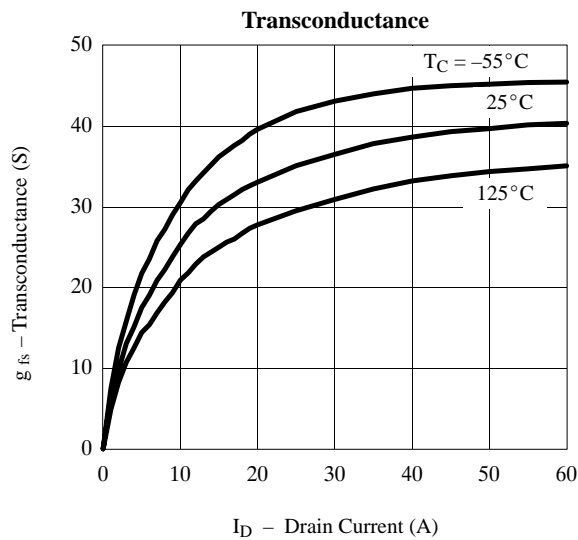
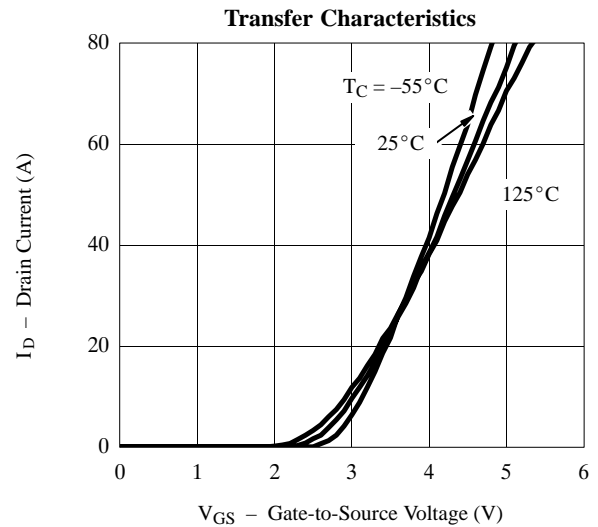
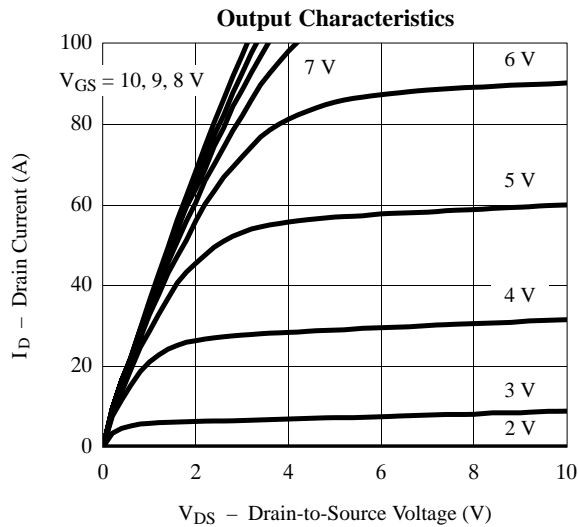
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -250\ \mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1.0			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$			-1	μA
		$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}, T_J = 125^\circ\text{C}$			-50	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} = -5\text{ V}, V_{GS} = -10\text{ V}$	-50			A
		$V_{DS} = -5\text{ V}, V_{GS} = -4.5\text{ V}$	-20			
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = -10\text{ V}, I_D = -13\text{ A}$		0.012	0.015	Ω
		$V_{GS} = -10\text{ V}, I_D = -13\text{ A}, T_J = 125^\circ\text{C}$		0.018	0.026	
		$V_{GS} = -4.5\text{ V}, I_D = -13\text{ A}$		0.020	0.024	
Forward Transconductance ^b	g_{fs}	$V_{DS} = -15\text{ V}, I_D = -13\text{ A}$	20			S
Dynamic^a						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = -25\text{ V}, F = 1\text{ MHz}$		3200		pF
Output Capacitance	C_{oss}			800		
Reverse Transfer Capacitance	C_{rss}			280		
Total Gate Charge ^c	Q_g	$V_{DS} = -15\text{ V}, V_{GS} = -10\text{ V}, I_D = -45\text{ A}$		50	125	nC
Gate-Source Charge ^c	Q_{gs}			14		
Gate-Drain Charge ^c	Q_{gd}			6.2		
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = -15\text{ V}, R_L = 0.33\ \Omega$ $I_D \cong -45\text{ A}, V_{GEN} = -10\text{ V}, R_G = 2.4\ \Omega$		13	20	ns
Rise Time ^c	t_r			10	20	
Turn-Off Delay Time ^c	$t_{d(off)}$			50	100	
Fall Time ^c	t_f			20	40	
Source-Drain Diode Ratings and Characteristic ($T_C = 25^\circ\text{C}$)						
Pulsed Current	I_{SM}				100	A
Diode Forward Voltage ^b	V_{SD}	$I_F = -45\text{ A}, V_{GS} = 0\text{ V}$		1.0	1.5	V
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -45\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$		55	100	ns

Notes

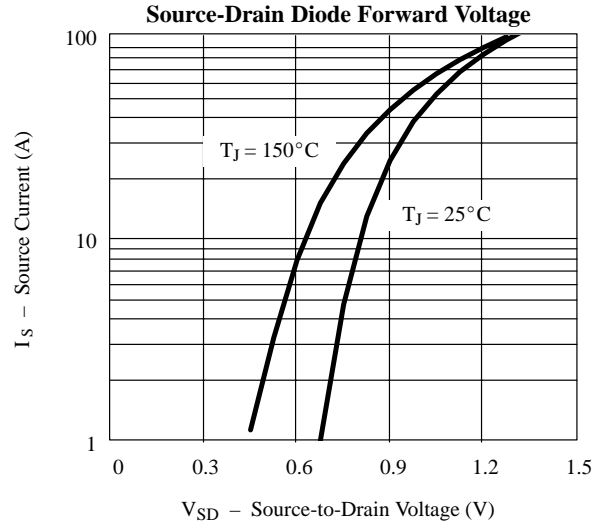
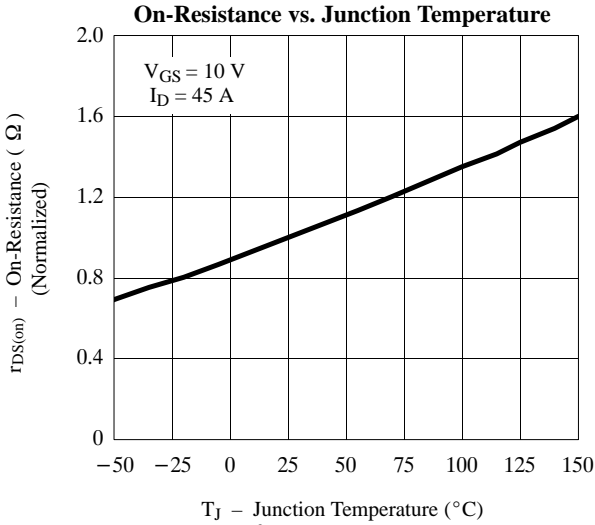
- a. Guaranteed by design, not subject to production testing.
b. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
c. Independent of operating temperature.

Typical Characteristics (25°C Unless Otherwise Noted)

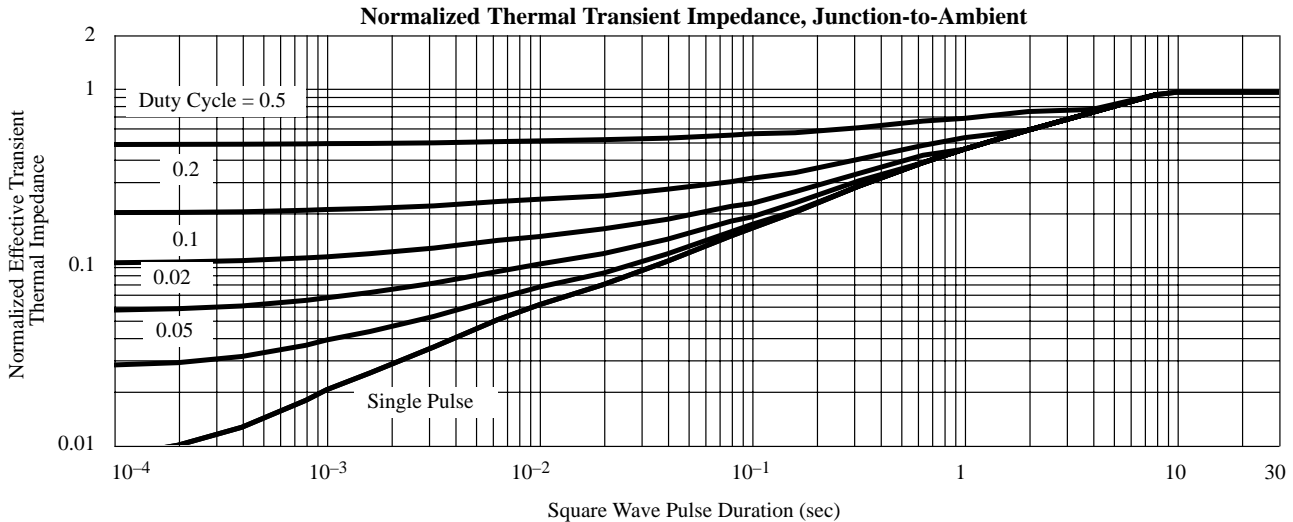
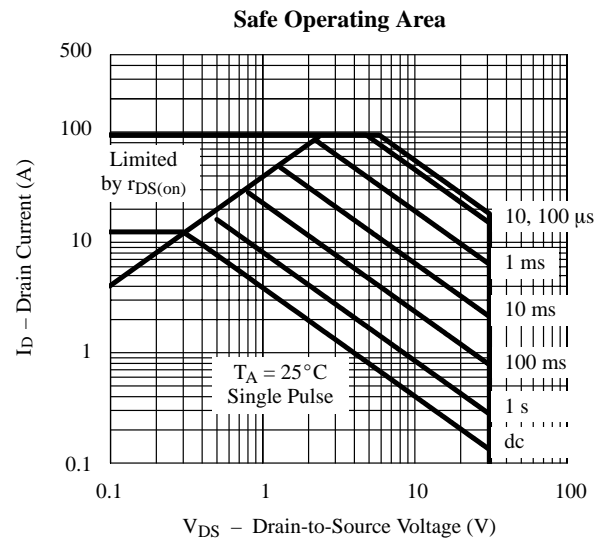
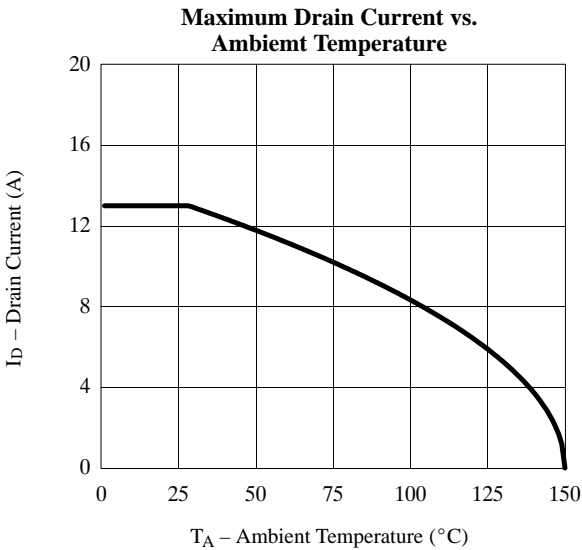




Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.