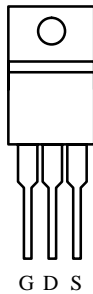


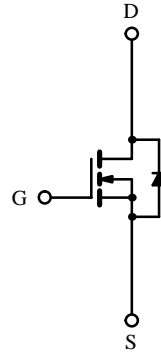
**N-Channel 30-V (D-S), 150°C MOSFET, Logic Level****Product Summary**

$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
30	0.01	60

TO-220AB

Top View

DRAIN connected to TAB



N-Channel MOSFET

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_C = 25^\circ\text{C}$	I_D	60	A
	$T_C = 100^\circ\text{C}$		51	
Pulsed Drain Current		I_{DM}	240	
Avalanche Current		I_{AR}	60	
Avalanche Energy	$L = 0.1$ mH	E_{AS}	180	
Repetitive Avalanche Energy ^a	$L = 0.05$ mH	E_{AR}	90	
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	105	W
	$T_C = 100^\circ\text{C}$		42	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Lead Temperature ($1/16''$ from case for 10 sec.)		T_L	300	

Thermal Resistance Ratings

Parameter	Symbol	Typical	Maximum	Unit
Junction-to-Ambient	R_{thJA}		80	$^\circ\text{C}/\text{W}$
Junction-to-Case	R_{thJC}		1.2	
Case-to-Sink	R_{thCS}	1.0		

Notes:

a. Duty cycle $\leq 1\%$

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70280.

A SPICE Model data sheet is available for this product (FaxBack document #70525).



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

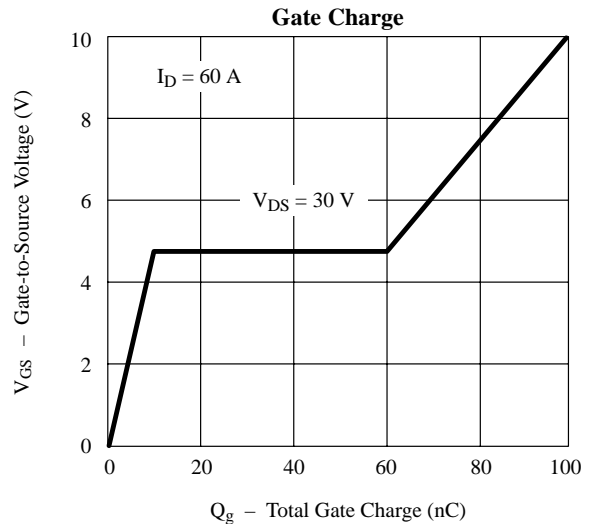
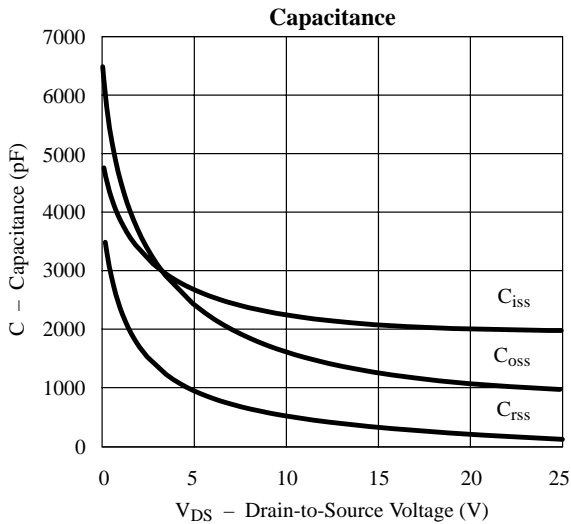
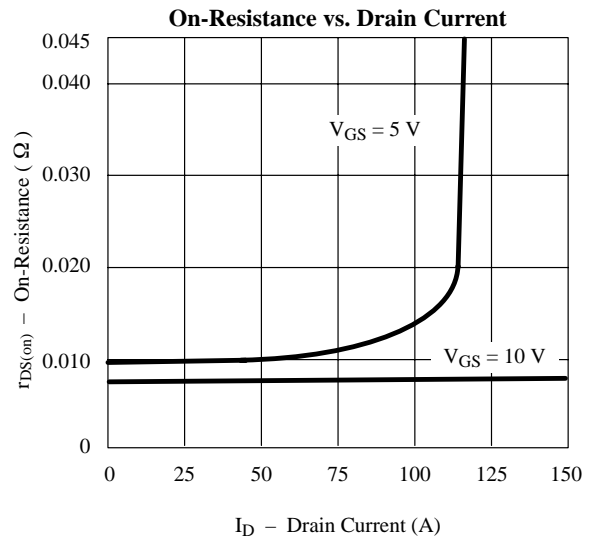
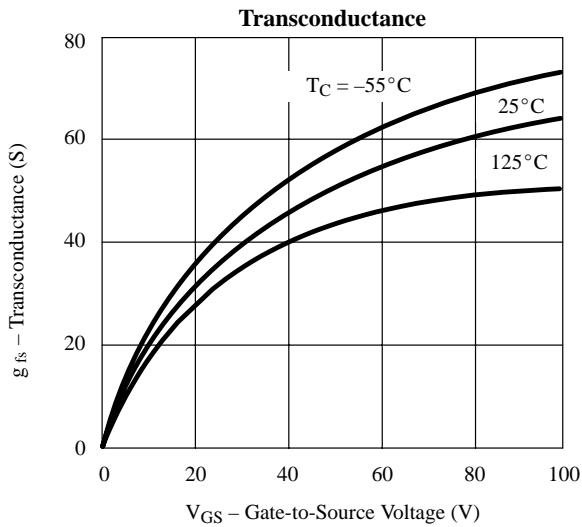
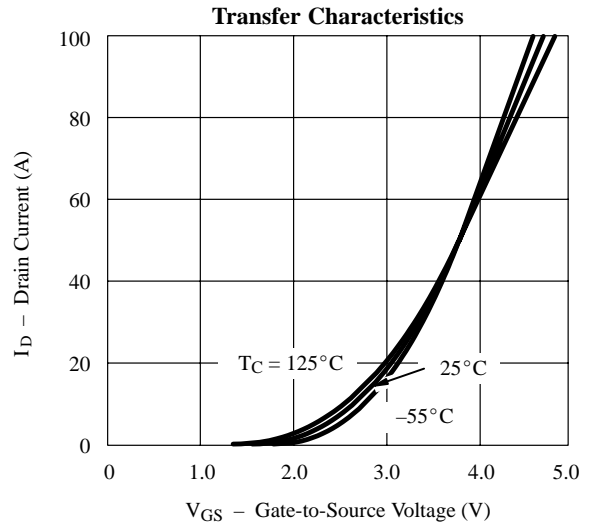
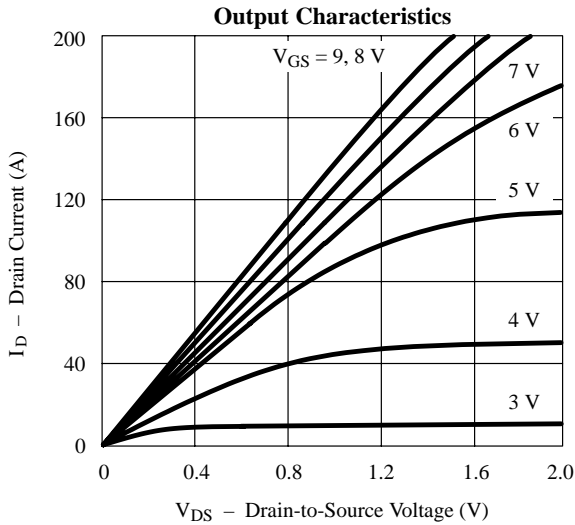
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 1\ \text{mA}$	0.8		3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$			± 500	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24\ \text{V}, V_{GS} = 0\ \text{V}$			25	μA
		$V_{DS} = 24\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 125^\circ\text{C}$			250	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} = 10\ \text{V}, V_{GS} = 10\ \text{V}$	60			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}, I_D = 30\ \text{A}$		0.007	0.010	Ω
		$V_{GS} = 5\ \text{V}, I_D = 30\ \text{A}$		0.010	0.015	
		$V_{GS} = 10\ \text{V}, I_D = 30\ \text{A}, T_J = 125^\circ\text{C}$		0.009	0.014	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 15\ \text{V}, I_D = 30\ \text{A}$		45		S
Dynamic						
Input Capacitance	C_{iss}	$V_{GS} = 0\ \text{V}, V_{DS} = 25\ \text{V}, f = 1\ \text{MHz}$		2600		pF
Output Capacitance	C_{oss}			1500		
Reverse Transfer Capacitance	C_{rss}			750		
Total Gate Charge ^c	Q_g	$V_{DS} = 15\ \text{V}, V_{GS} = 10\ \text{V}, I_D = 60\ \text{A}$		100	120	nC
Gate-Source Charge ^c	Q_{gs}			10	15	
Gate-Drain Charge ^c	Q_{gd}			45	75	
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = 30\ \text{V}, R_L = 1\ \Omega$ $I_D \approx 30\ \text{A}, V_{GEN} = 10\ \text{V}, R_G = 2.5\ \Omega$		14	30	ns
Rise Time ^c	t_r			25	50	
Turn-Off Delay Time ^c	$t_{d(off)}$			65	100	
Fall Time ^c	t_f			45	80	
Source-Drain Diode Ratings and Characteristics ($T_C = 25^\circ\text{C}$)						
Continuous Current	I_S				60	A
Pulsed Current	I_{SM}				240	
Forward Voltage ^b	V_{SD}	$I_F = 60\ \text{A}, V_{GS} = 0\ \text{V}$			1.6	V
Reverse Recovery Time	t_{rr}	$I_F = 60\ \text{A}, dI_F/dt = 100\ \text{A}/\mu\text{s}$		160		ns
Peak Reverse Recovery Current	$I_{RM(REC)}$			13		A
Reverse Recovery Charge	Q_{rr}			1.0		μC

Notes:

- For design aid only; not subject to production testing.
- Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
- Independent of operating temperature.

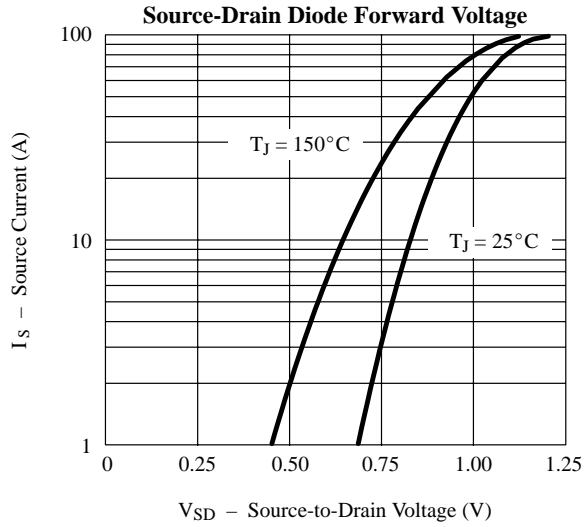
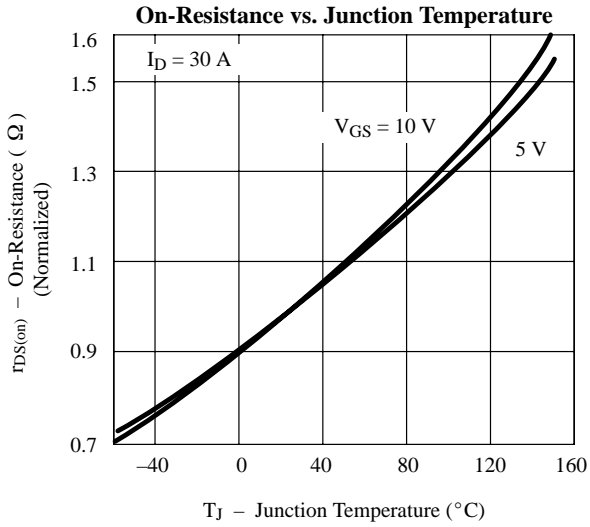


Typical Characteristics (25°C Unless Otherwise Noted)

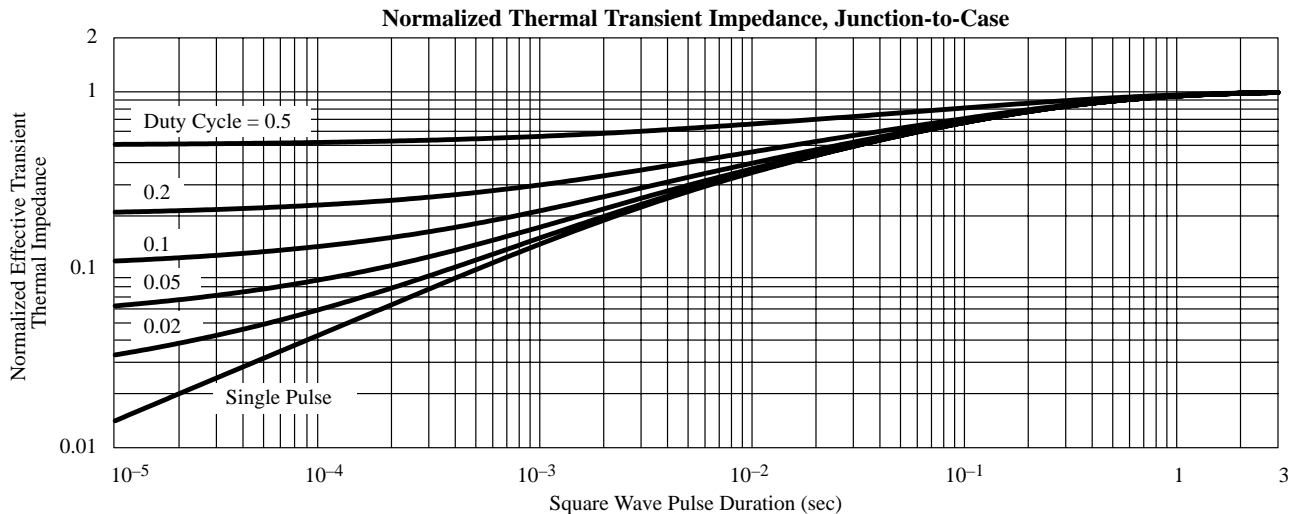
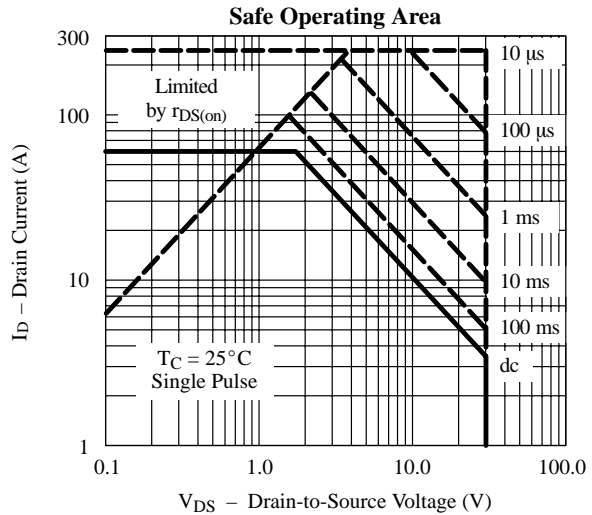
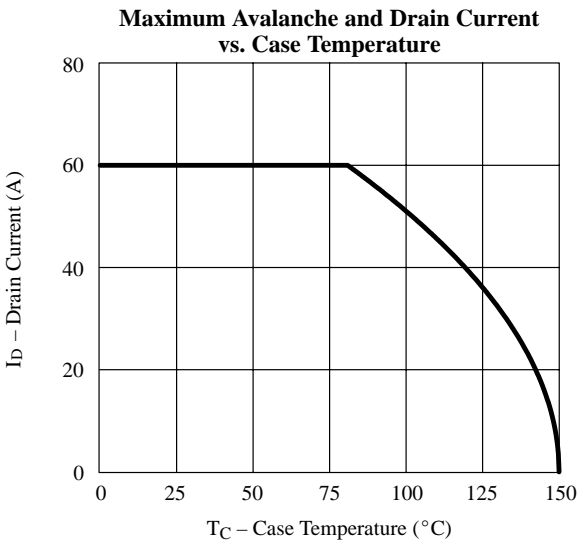




Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings





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.