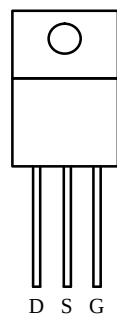


P-Channel Enhancement-Mode Transistor

Product Summary

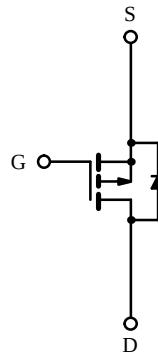
$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-100	0.210	-17

TO-254AA
Hermetic Package



Top View

Case Isolated



P-Channel MOSFET

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_C = 25^\circ\text{C}$	I_D	-17	A
	$T_C = 100^\circ\text{C}$		-10.8	
Pulsed Drain Current		I_{DM}	-68	
Maximum Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	100	W
	$T_C = 100^\circ\text{C}$		40	
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
Maximum Junction-to-Ambient	R_{thJA}		50	$^\circ\text{C/W}$
Maximum Junction-to-Case	R_{thJC}		1.25	
Case-to-Sink	R_{thCS}	0.2		

Subsequent updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #1456.

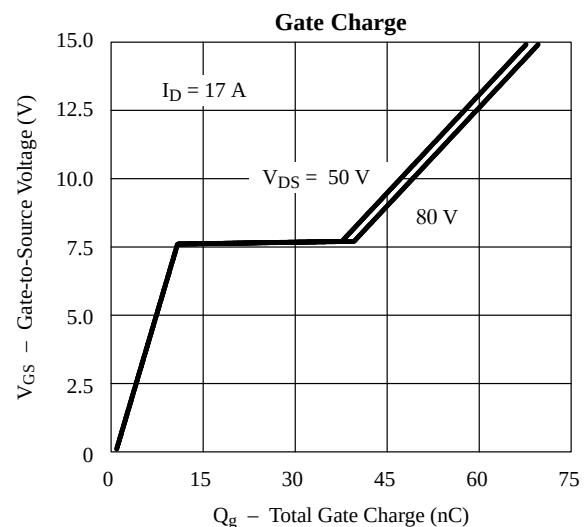
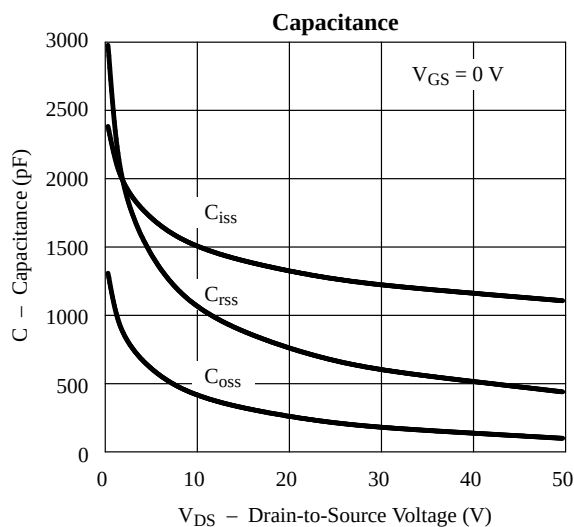
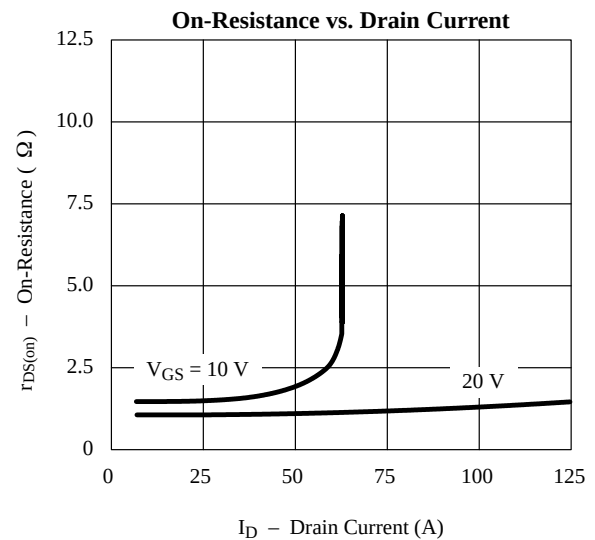
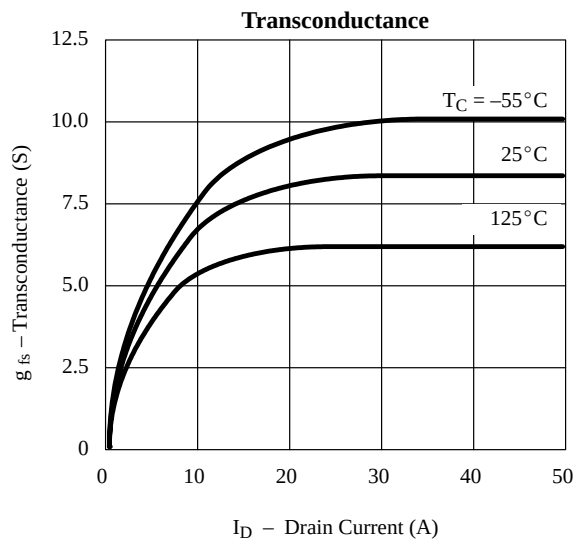
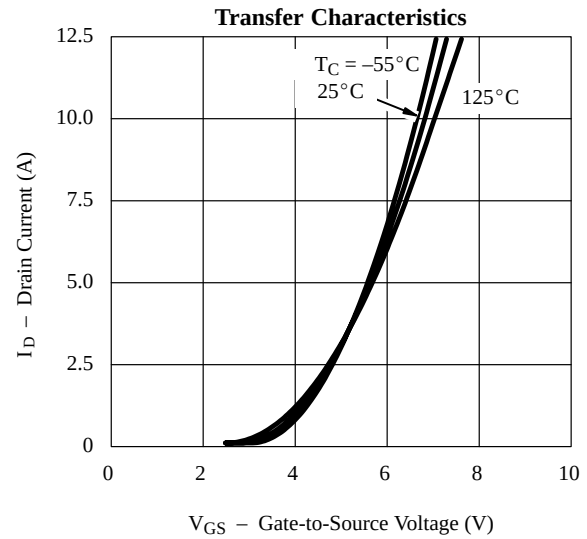
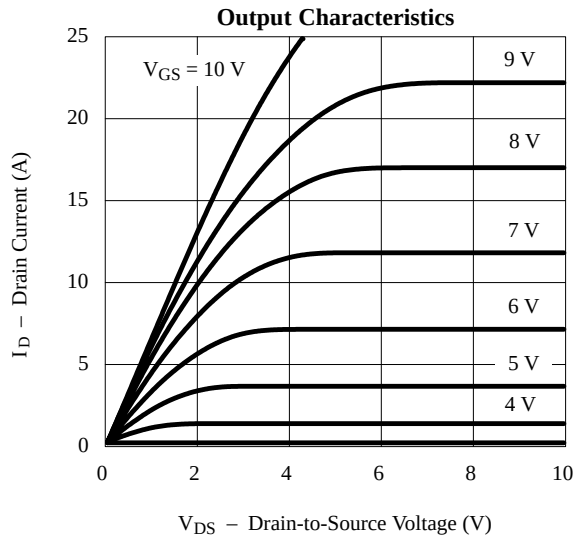
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Limit			Unit
			Min	Typ ^a	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = −250 μA	−100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = −250 μA	−2.0		−4.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = −80 V, V _{GS} = 0 V			−25	μA
		V _{DS} = −80 V, V _{GS} = 0 V, T _J = 125°C			−250	
On-State Drain Current ^b	I _{D(on)}	V _{DS} = −10 V, V _{GS} = −10 V	−17			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = −10 V, I _D = −10.8 A		0.14	0.210	Ω
		V _{GS} = −10 V, I _D = −10.8 A, T _J = 125°C		0.22	0.32	
Forward Transconductance ^b	g _{fs}	V _{DS} = −15 V, I _D = −10.8 A	5.0	5.5		S
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = −25 V, f = 1 MHz		1300		pF
Output Capacitance	C _{oss}			750		
Reverse Transfer Capacitance	C _{rss}			300		
Total Gate Charge ^c	Q _g	V _{DS} = −50 V, V _{GS} = −10 V, I _D = −17 A		47	60	nC
Gate-Source Charge ^c	Q _{gs}			10	18	
Gate-Drain Charge ^c	Q _{gd}			27	36	
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = −50 V, R _L = 2.7 Ω I _D ≈ −17 A, V _{GEN} = −10 V, R _G = 4.7 Ω		10	30	ns
Rise Time ^c	t _r			50	80	
Turn-Off Delay Time ^c	t _{d(off)}			25	80	
Fall Time ^c	t _f			15	60	
Source-Drain Diode Ratings and Characteristics						
Continuous Current	I _S				−17	A
Pulsed Current	I _{SM}				−68	
Diode Forward Voltage ^b	V _{SD}	I _F = −17 A, V _{GS} = 0 V			−2.0	V
Reverse Recovery Time	t _{rr}	I _F = −17 A, di/dt = 100 A/μs		150		ns
Reverse Recovery Charge	Q _{rr}			0.3		μC

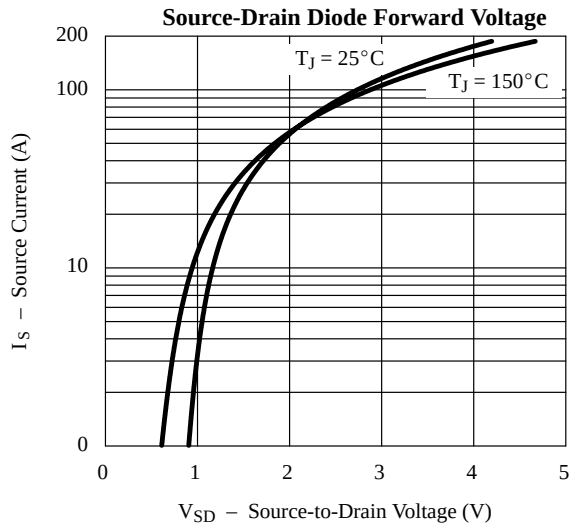
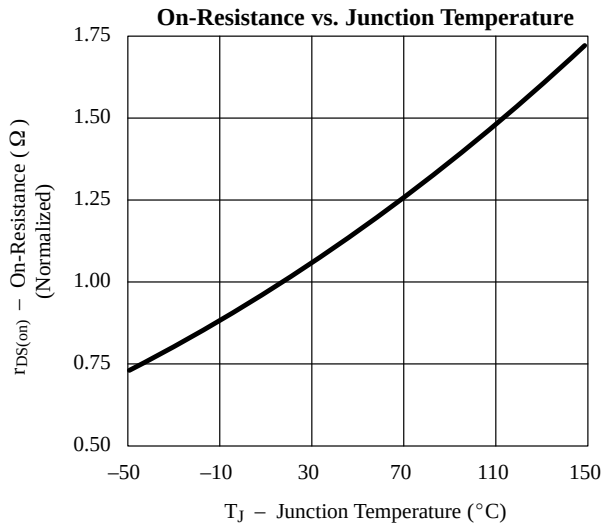
Notes:

- a. For design aid only; not subject to production testing.
 b. Pulse test; pulse width $\leq 300\text{ }\mu\text{s}$, 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

