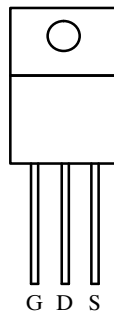


N-Channel Enhancement-Mode Transistor

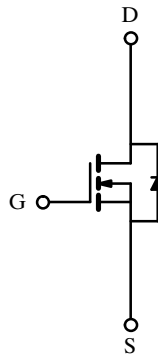
Product Summary

$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
100	0.15	13

TO-257AB
Hermetic Package



Case Isolated



N-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 ($T_J = 150^\circ\text{C}$)	I_D	$T_C = 25^\circ\text{C}$	13	A
		$T_C = 100^\circ\text{C}$	8.0	
Pulsed Drain Current	I_{DM}	48		
Maximum Power Dissipation	P_D	$T_C = 25^\circ\text{C}$	50	W
		$T_C = 100^\circ\text{C}$	20	
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}		80	$^\circ\text{C/W}$
Maximum Junction-to-Case	R_{thJC}		2.5	
Case-to-Sink	R_{thCS}	1.0		

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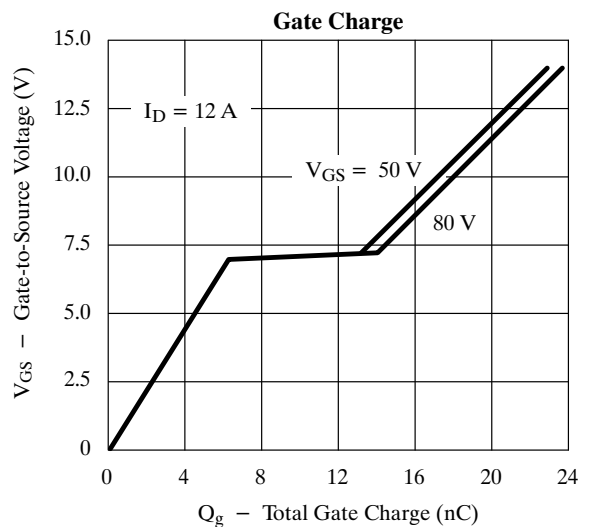
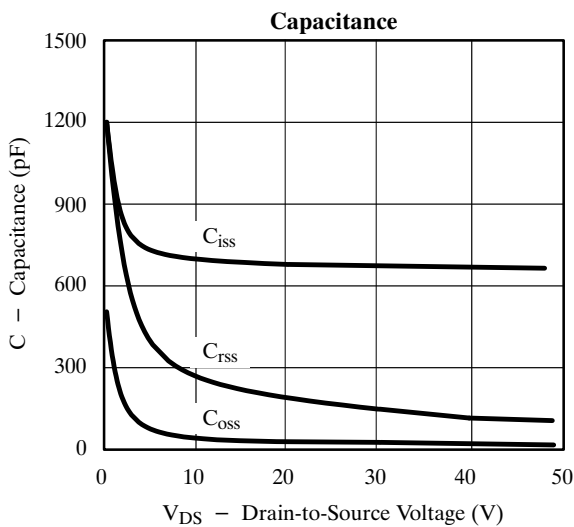
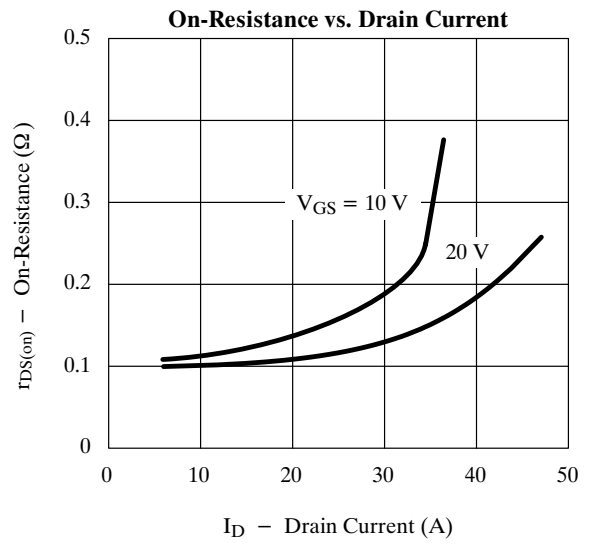
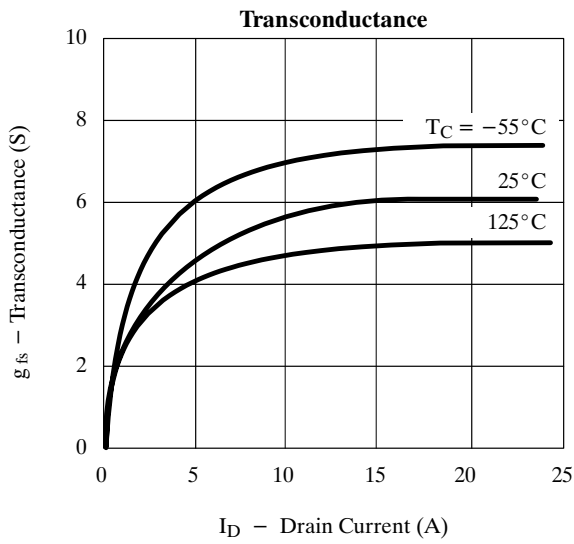
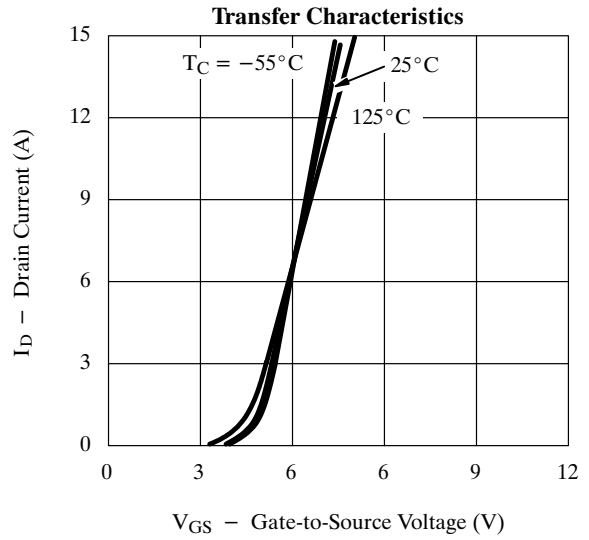
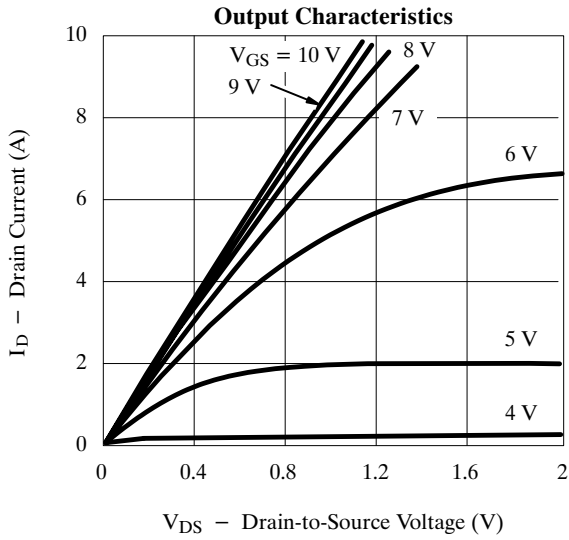
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Limit			Unit
			Min	Typ ^a	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	2.0		4.0	
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}	$V_{DS} = 80\text{ V}, V_{GS} = 0\text{ V}$			25	μA
		$V_{DS} = 80\text{ V}, V_{GS} = 0\text{ V}, T_J = 125^\circ\text{C}$			250	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} = 10\text{ V}, V_{GS} = 10\text{ V}$	13.0			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 8.0\text{ A}$		0.12	0.15	Ω
		$V_{GS} = 10\text{ V}, I_D = 8.0\text{ A}, T_J = 125^\circ\text{C}$		0.22	0.27	
Forward Transconductance ^b	g_{fs}	$V_{DS} = 15\text{ V}, I_D = 8.0\text{ A}$	4.0	5.0		S
Dynamic						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		600		pF
Output Capacitance	C_{oss}			190		
Reverse Transfer Capacitance	C_{rss}			35		
Total Gate Charge ^c	Q_g	$V_{DS} = 50\text{ V}, V_{GS} = 10\text{ V}, I_D = 13\text{ A}$		17	30	nC
Gate-Source Charge ^c	Q_{gs}			6	9.0	
Gate-Drain Charge ^c	Q_{gd}			9	20	
Turn-On Delay Time ^c	$t_{d(on)}$	$V_{DD} = 50\text{ V}, R_L = 3.8\ \Omega$ $I_D \cong 13\text{ A}, V_{GEN} = 10\text{ V}, R_G = 7.5\ \Omega$		7	30	ns
Rise Time ^c	t_r			45	80	
Turn-Off Delay Time ^c	$t_{d(off)}$			30	60	
Fall Time ^c	t_f			10	40	
Source-Drain Diode Ratings and Characteristics						
Continuous Current	I_S				13	A
Pulsed Current	I_{SM}				48	
Diode Forward Voltage ^b	V_{SD}	$I_F = 13\text{ A}, V_{GS} = 0\text{ V}$			2.5	V
Reverse Recovery Time	t_{rr}	$I_F = 13\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$		100	300	ns
Reverse Recovery Charge	Q_{rr}			0.7		μC

Notes:

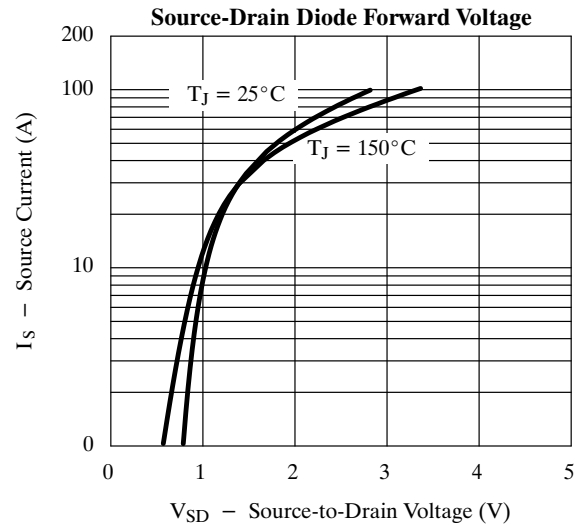
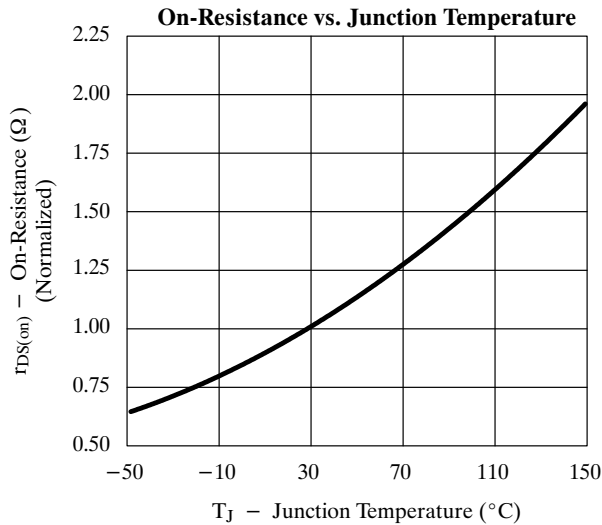
- For design aid only; not subject to production testing.
- Pulse test; pulse width, duty cycle.
- Independent of operating temperature.

Typical Characteristics (25°C Unless Otherwise Noted)



2N7081

Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings

