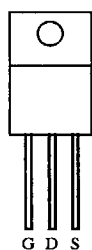


### N-Channel Enhancement-Mode Transistor

#### Product Summary

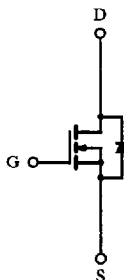
$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
100	0.15	13

TO-257AB  
Hermetic Package



Top View

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	$V_{GS}$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ )	$I_D$	$T_C = 25^\circ\text{C}$	13
		$T_C = 100^\circ\text{C}$	8.0
Pulsed Drain Current	$I_{DM}$	48	A
Maximum Power Dissipation	$P_D$	$T_C = 25^\circ\text{C}$	50
		$T_C = 100^\circ\text{C}$	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		

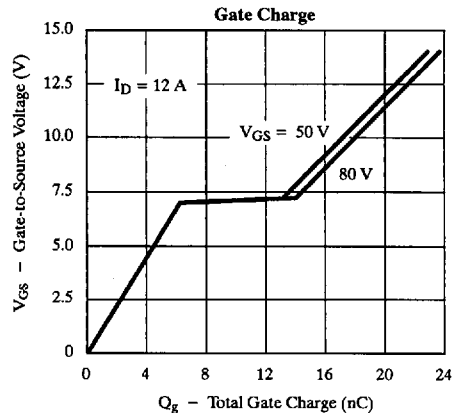
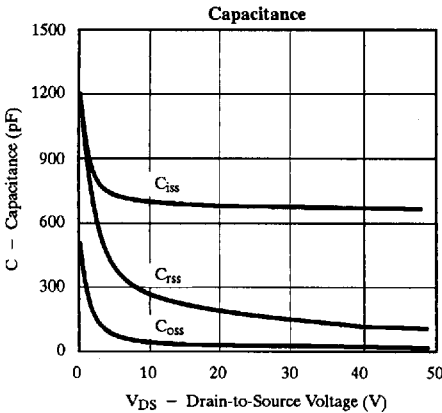
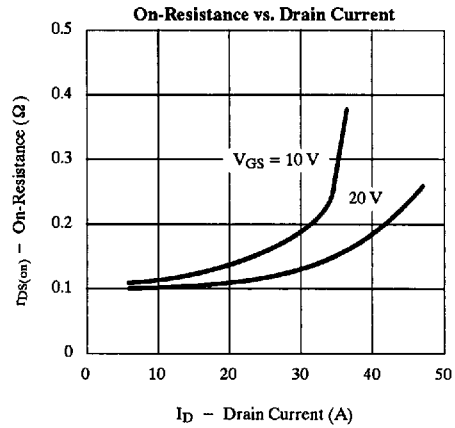
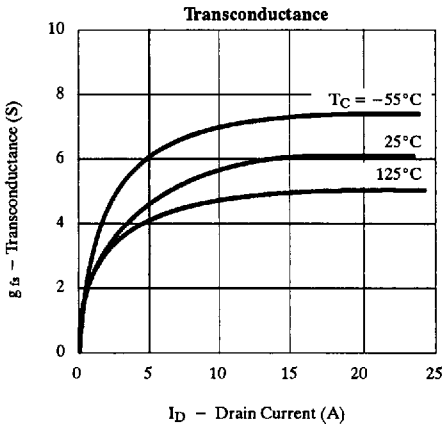
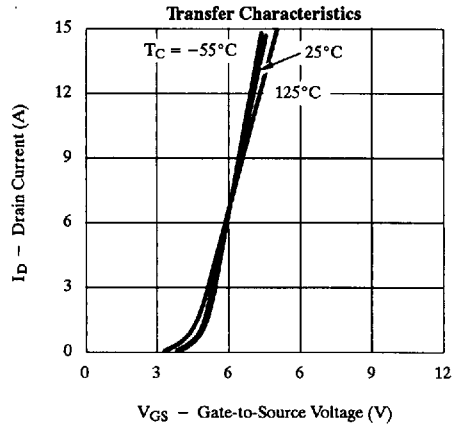
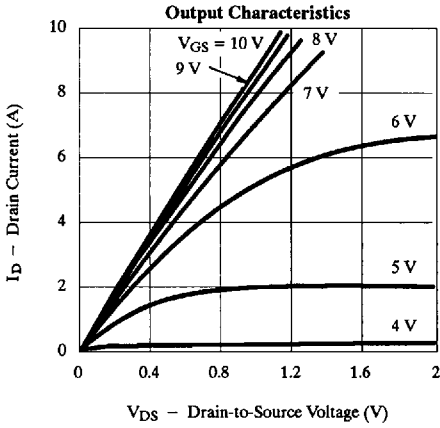
## Specifications (T<sub>J</sub> = 25°C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Limit			Unit
			Min	Typ <sup>a</sup>	Max	
<b>Static</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 μA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA	2.0		4.0	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 80 V, V <sub>GS</sub> = 0 V			25	μA
		V <sub>DS</sub> = 80 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 125°C			250	
On-State Drain Current <sup>b</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 10 V	13.0			A
Drain-Source On-State Resistance <sup>b</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 8.0 A		0.12	0.15	Ω
		V <sub>GS</sub> = 10 V, I <sub>D</sub> = 8.0 A, T <sub>J</sub> = 125°C		0.22	0.27	
Forward Transconductance <sup>b</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 8.0 A	4.0	5.0		S
<b>Dynamic</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 25 V, f = 1 MHz		600		pF
Output Capacitance	C <sub>oss</sub>			190		
Reverse Transfer Capacitance	C <sub>rss</sub>			35		
Total Gate Charge <sup>c</sup>	Q <sub>g</sub>	V <sub>DS</sub> = 50 V, V <sub>GS</sub> = 10 V, I <sub>D</sub> = 13 A		17	30	nC
Gate-Source Charge <sup>c</sup>	Q <sub>gs</sub>			6	9.0	
Gate-Drain Charge <sup>c</sup>	Q <sub>gd</sub>			9	20	
Turn-On Delay Time <sup>c</sup>	t <sub>d(on)</sub>	V <sub>DD</sub> = 50 V, R <sub>L</sub> = 3.8 Ω I <sub>D</sub> = 13 A, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 7.5 Ω		7	30	ns
Rise Time <sup>c</sup>	t <sub>r</sub>			45	80	
Turn-Off Delay Time <sup>c</sup>	t <sub>d(off)</sub>			30	60	
Fall Time <sup>c</sup>	t <sub>f</sub>			10	40	
<b>Source-Drain Diode Ratings and Characteristics</b>						
Continuous Current	I <sub>S</sub>				13	A
Pulsed Current	I <sub>SM</sub>				48	
Diode Forward Voltage <sup>b</sup>	V <sub>SD</sub>	I <sub>F</sub> = 13 A, V <sub>GS</sub> = 0 V			2.5	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 13 A, di/dt = 100 A/μs		100	300	ns
Reverse Recovery Charge	Q <sub>rr</sub>				0.7	

**Notes:**

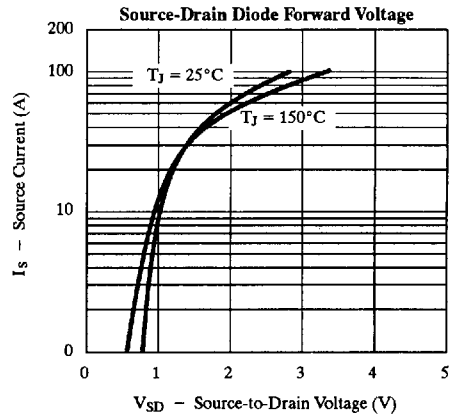
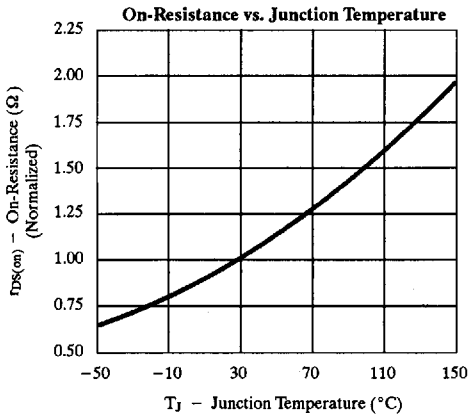
- a. For design aid only; not subject to production testing.
- b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- c. Independent of operating temperature.

### Typical Characteristics (25°C Unless Otherwise Noted)



6  
N-/P-Channel  
MOSFETs

## Typical Characteristics (25°C Unless Otherwise Noted)



## Thermal Ratings

