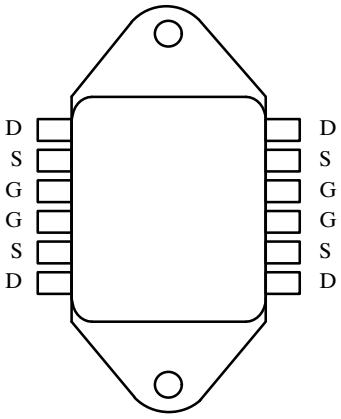
MOD200B/200C

Four N-Channel Enhancement-Mode Transistors

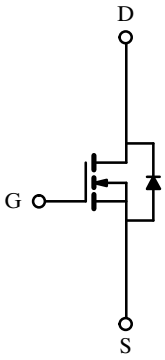
Product Summary

$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
200	0.11	21



Leadform Options

MOD200B . . . . Bent Down
MOD200C . . . . Bent Up



N-Channel MOSFET

Absolute Maximum Ratings (T_C = 25°C Unless Otherwise Noted)

Parameter		Symbol	Single Die	All Die	Unit
Drain-Source Voltage		V_{DS}	200	200	V
Gate-Source Voltage		V_{GS}	±20	±20	
Continuous Drain Current (T_J = 150°C)	T_C = 25°C	I_D	21	84	A
	T_C = 100°C		17	56	
Pulsed Drain Current		I_{DM}	100	360	
Avalanche Current		I_A	21		
Maximum Power Dissipation	T_C = 25°C	P_D	150	400	W
	T_C = 100°C		60	160	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	−55 to 150		°C
Isolation Voltage		V_{ISOL}	1000		V

Thermal Resistance Ratings

Parameter	Symbol	Typical	Single Die	All Die	Unit
Maximum Junction-to-Ambient	R_{thJA}		30	30	°C/W
Maximum Junction-to-Case	R_{thJC}		0.83	0.31	
Case-to-Sink	R_{thCS}	0.1			

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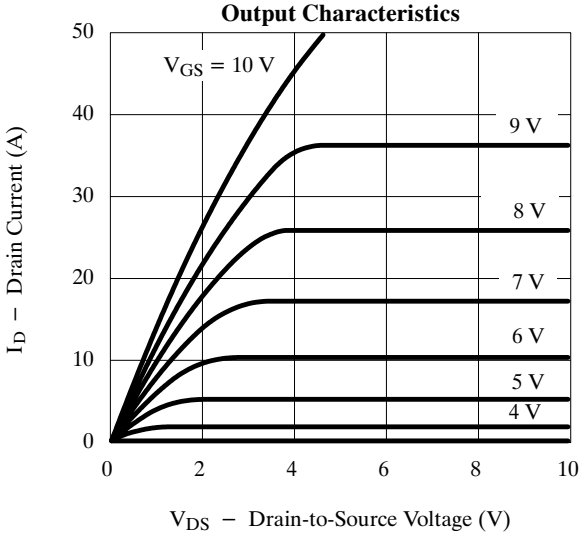
Specifications (T_J = 25°C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Limit			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 250 µA	200			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} = 160 V, V_{GS} = 0 V			250	µA
		V_{DS} = 160 V, V_{GS} = 0 V, T_J = 125°C			1000	
On-State Drain Current[a]	$I_{D(on)}$	V_{DS} = 10 V, V_{GS} = 10 V	21			A
Drain-Source On-State Resistance[a]	$r_{DS(on)}$	V_{GS} = 10 V, I_D = 16 A		0.090	0.11	Ω
		V_{GS} = 10 V, I_D = 16 A, T_J = 125°C		0.150	0.175	
Forward Transconductance[a]	g_{fs}	V_{DS} = 15 V, I_D = 16 A	8.0	13		S
Dynamic						
Input Capacitance	C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		2700		pF
Output Capacitance	C_{oss}			850		
Reverse Transfer Capacitance	C_{rss}			300		
Total Gate Charge[b]	Q_g	V_{DS} = 100 V, V_{GS} = 10 V, I_D = 21 A		90	120	nC
Gate-Source Charge[b]	Q_{gs}			16	22	
Gate-Drain Charge[b]	Q_{gd}			37	60	
Turn-On Delay Time[b]	$t_{d(on)}$	V_{DD} = 95 V, R_L = 6.2 Ω I_D ≅ 16 A, V_{GEN} = 10 V, R_G = 4.7 Ω		15	35	ns
Rise Time[b]	t_r			30	100	
Turn-Off Delay Time[b]	$t_{d(off)}$			50	125	
Fall Time[b]	t_f			20	100	
Source-Drain Diode Ratings and Characteristics						
Continuous Current	I_S				21	A
Pulsed Current	I_{SM}				100	
Diode Forward Voltage[a]	V_{SD}	I_F = 21 A, V_{GS} = 0 V			2.5	V
Reverse Recovery Time	t_{rr}	I_F = 21 A, di/dt = 100 A/µs		150		ns
Reverse Recovery Charge	Q_{rr}			0 . 5		µC

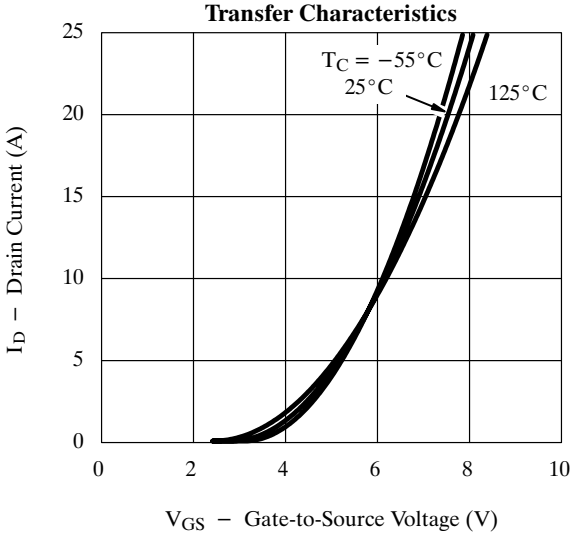
Notes:
a. Pulse test; pulse width ≤ 300 µs, duty cycle ≤ 2%.
b. Independent of operating temperature.

Typical Characteristics (25°C Unless Otherwise Noted)

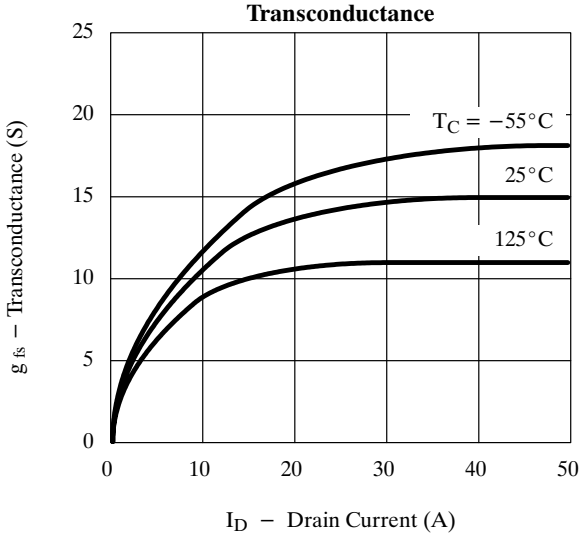
Output Characteristics



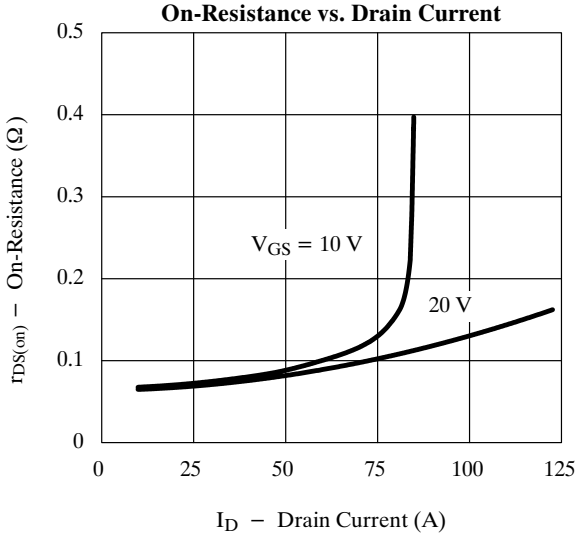
Transfer Characteristics



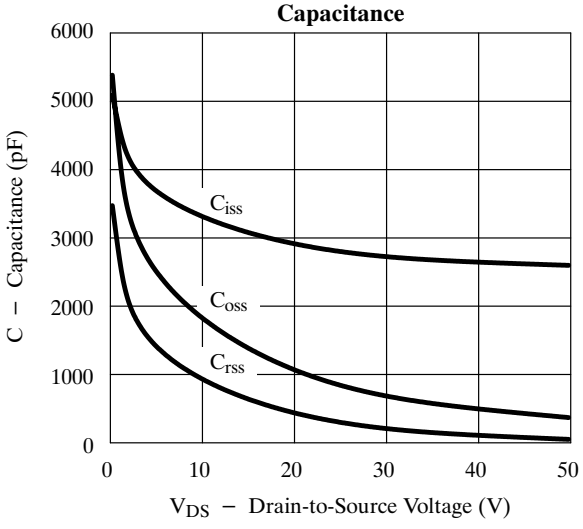
Transconductance



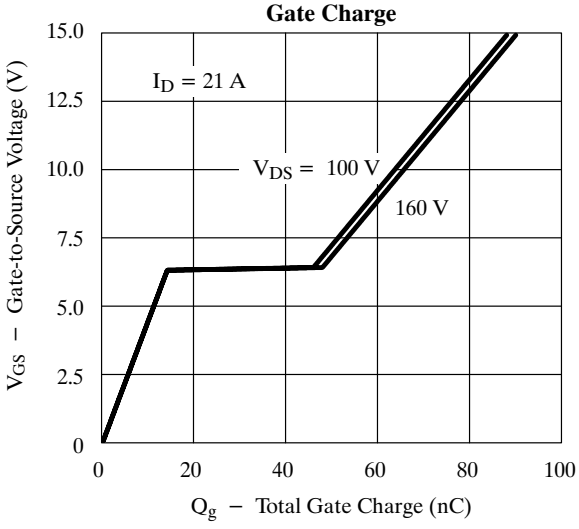
On-Resistance vs. Drain Current



Capacitance



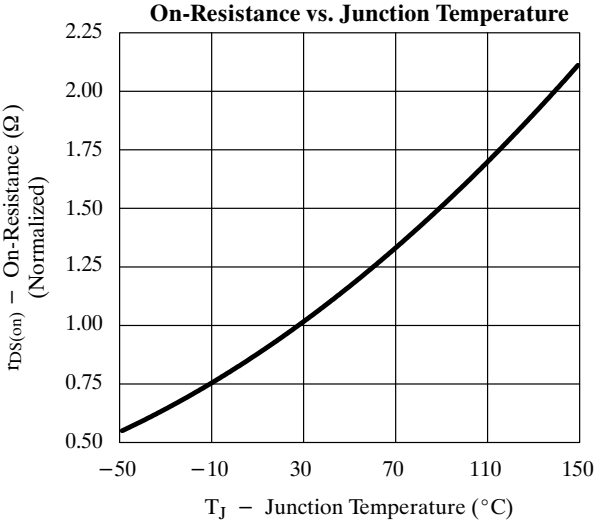
Gate Charge



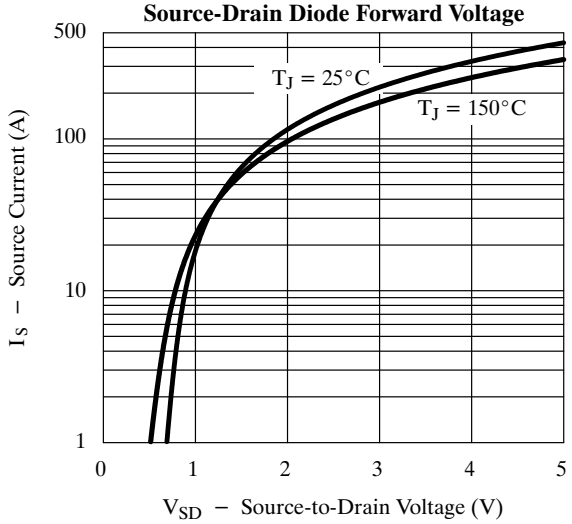
MOD200B/200C

Typical Characteristics (25°C Unless Otherwise Noted)

On-Resistance vs. Junction Temperature

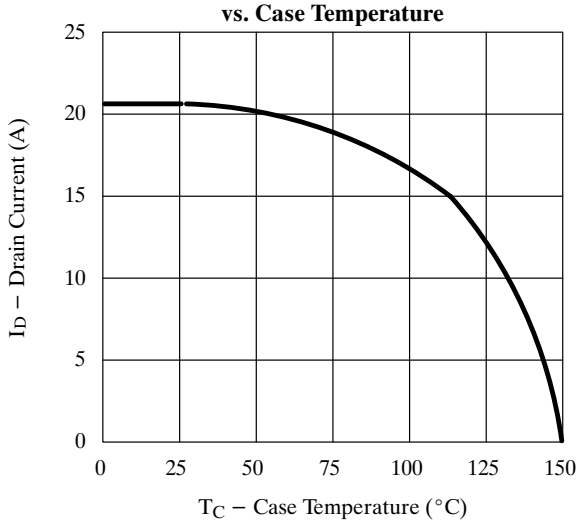


Source-Drain Diode Forward Voltage

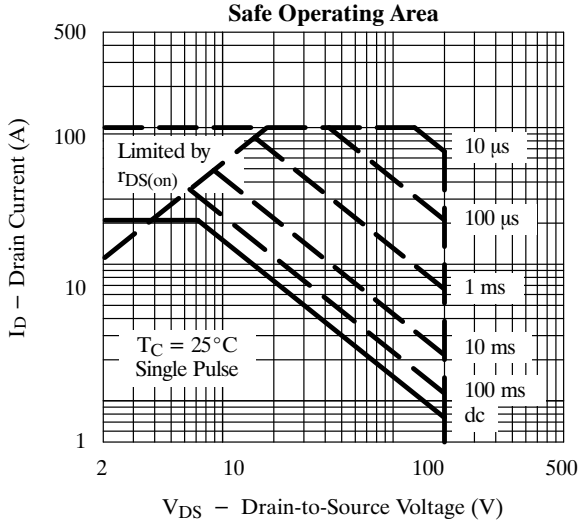
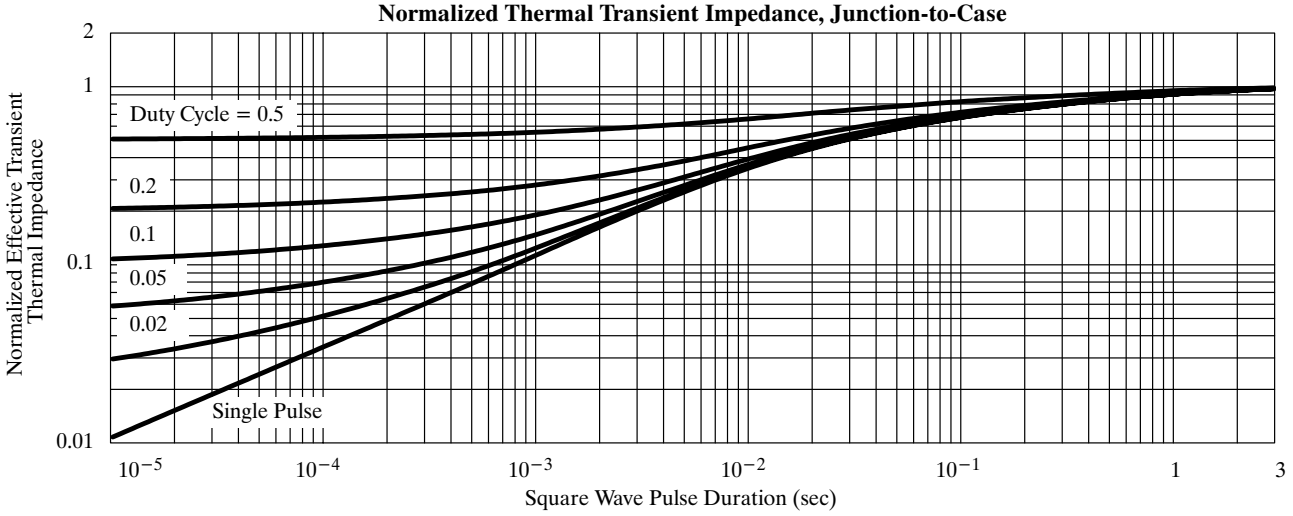


Thermal Ratings

Maximum Avalanche and Drain Current vs. Case Temperature



Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Case