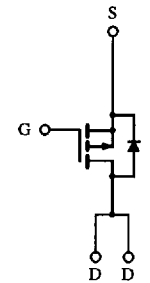
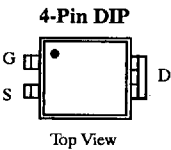


P-Channel Enhancement-Mode Transistors

Product Summary

Part Number	$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
IRFD9120	-100	0.60	-1.0
IRFD9123	-60	0.80	-0.8



P-Channel MOSFET

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

Parameter		Symbol	IRFD9120	IRFD9123	Unit
Drain-Source Voltage		V _{DS}	−100	−60	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current	T _A = 25°C	I _D	−1.0	−0.8	A
	T _A = 100°C		−0.6	−0.5	
Pulsed Drain Current		I _{DM}	−8.0	−6.4	W
Power Dissipation	T _A = 25°C	P _D	1.0	1.0	
	T _A = 100°C		0.4	0.4	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C
Lead Temperature (1/16" from case for 10 sec.)		T _L	300		

6
N-/P-Channel
MOSFETs

Thermal Resistance Ratings

Parameter	Symbol	Maximum	Unit
Junction-to-Ambient	R_{thJA}	120	$^\circ\text{C/W}$

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

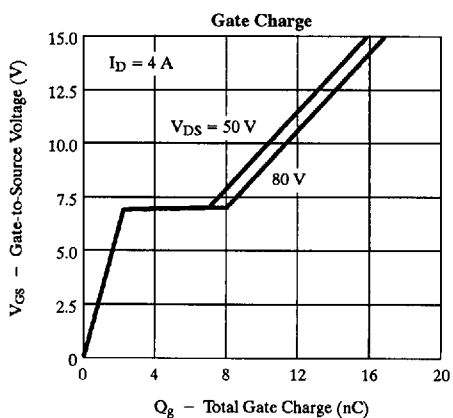
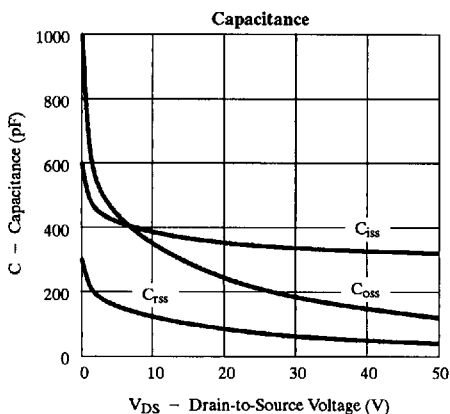
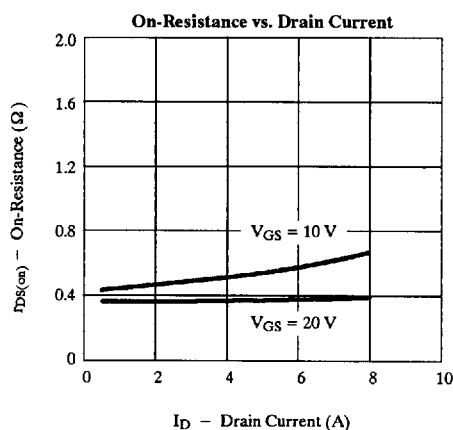
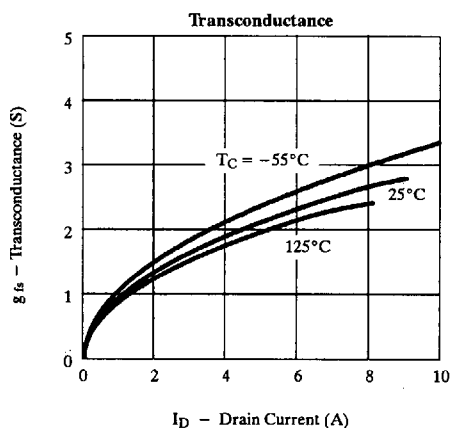
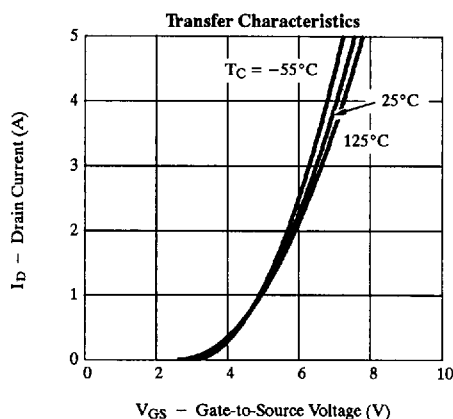
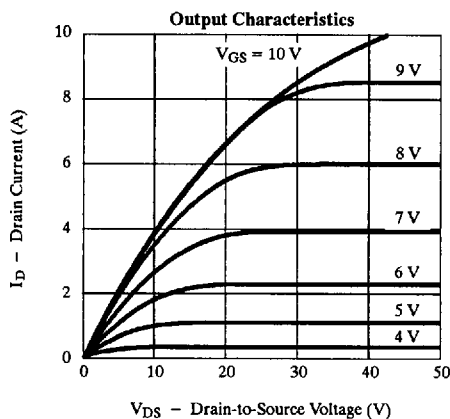
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit	
Static							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -250 μA	IRFD9120	-100		V	
			IRFD9123	-60			
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-2.0		-4.0		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±500	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = V _{(BR)DSS} , V _{GS} = 0 V			-250	μA	
		V _{DS} = 0.8 × V _{(BR)DSS} , V _{GS} = 0 V, T _J = 125°C			-1000		
On-State Drain Current ^b	I _{D(on)}	V _{DS} = -10 V, V _{GS} = -10 V	IRFD9120	-1.0		A	
			IRFD9123	-0.8			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = -10 V, I _D = -0.8 A	IRFD9120		0.50	0.60	Ω
			IRFD9123		0.60	0.80	
		V _{GS} = -10 V, I _D = -0.8 A, T _J = 125°C	IRFD9120		0.80	1.0	
			IRFD9123		1.00	1.4	
Forward Transconductance ^b	g _{fs}	V _{DS} = -15 V, I _D = -0.8 A	0.8	1.0		S	
Dynamic							
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = -25 V, f = 1 MHz		350	450	pF	
Output Capacitance	C _{oss}			205	350		
Reverse Transfer Capacitance	C _{rss}			80	100		
Total Gate Charge ^c	Q _g	V _{DS} = -50 V, V _{GS} = 10 V, I _D = -4 A		9	20	nC	
Gate-Source Charge ^c	Q _{gs}			1.8			
Gate-Drain Charge ^c	Q _{gd}			5.6			
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = -50 V, R _L = 62 Ω I _D ≈ -0.8 A, V _{GEN} = -10 V, R _G = 25 Ω		9	50	ns	
Rise Time ^c	t _r			25	100		
Turn-Off Delay Time ^c	t _{d(off)}			30	100		
Fall Time ^c	t _f			30	100		
Source-Drain Diode Ratings and Characteristics (T _A = 25°C)							
Continuous Current	I _S		IRFD9120		-1.0	A	
			IRFD9123		-0.8		
Pulsed Current	I _{SM}		IRFD9120		-8.0	A	
			IRFD9123		-6.4		
Forward Voltage ^b	V _{SD}	I _F = I _S , V _{GS} = 0 V	IRFD9120		-6.3	V	
			IRFD9123		-6.0		
Reverse Recovery Time	t _{rr}	I _F = I _S , dI _F /dt = 100 A/μs		80		ns	
Reverse Recovery Charge	Q _{rr}			0.18		μC	

Notes:

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

Typical Characteristics (25°C Unless Otherwise Noted)

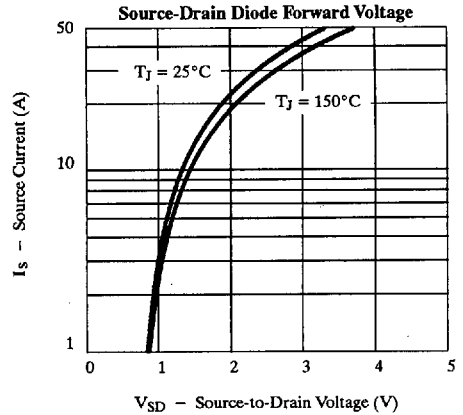
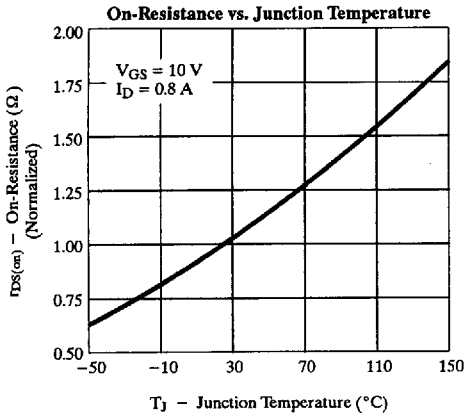
Negative signs omitted for clarity.



IRFD9120/9123

Typical Characteristics (25°C Unless Otherwise Noted)

Negative signs omitted for clarity.



Thermal Ratings

