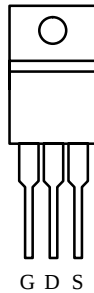


N-Channel Enhancement-Mode Transistor

Product Summary

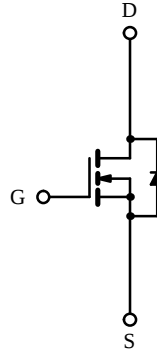
$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D (A)
100	0.060	30

TO-220AB



Top View

DRAIN connected to TAB



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	$T_C = 25^\circ\text{C}$	I_D	30	A
	$T_C = 100^\circ\text{C}$		18	
Pulsed Drain Current		I_{DM}	120	
Avalanche Current		I_{AR}	30	
Avalanche Energy	$L = 0.3\text{ mH}$	E_A	135	mJ
Repetitive Avalanche Energy ^a	$L = 0.1\text{ mH}$	E_{AR}	45	
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
Junction-to-Ambient	R_{thJA}		80	$^\circ\text{C/W}$
Junction-to-Case	R_{thJC}		1.25	
Case-to-Sink	R_{thCS}	1.0		

Notes:

a. Duty cycle $\leq 1\%$

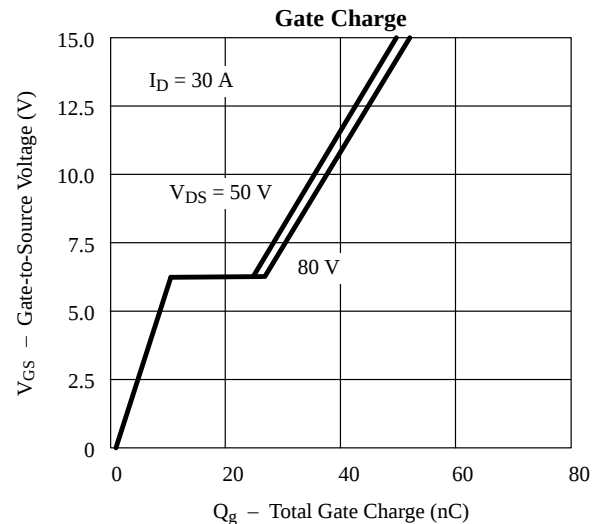
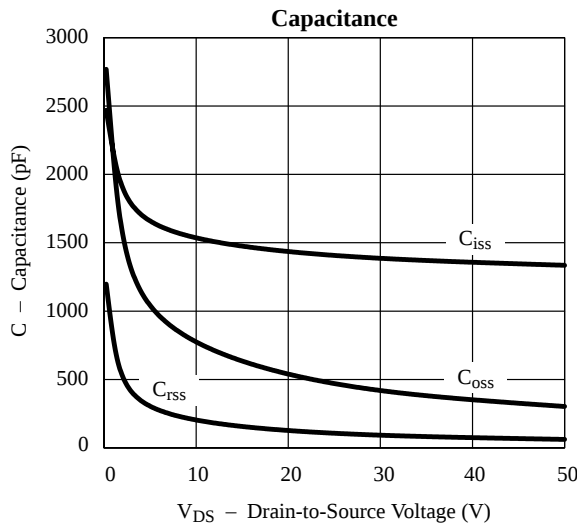
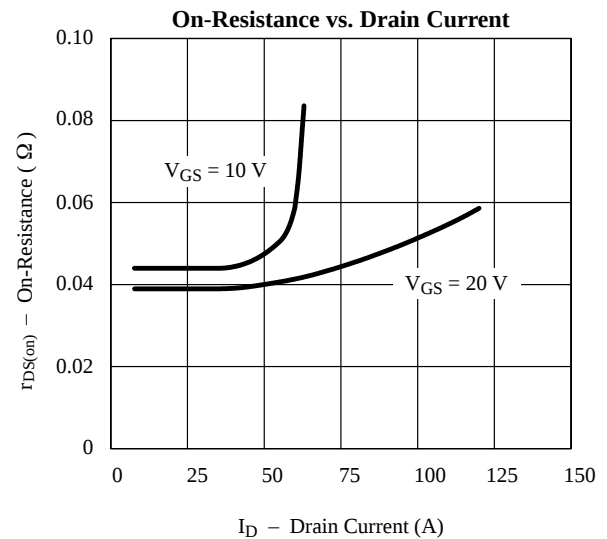
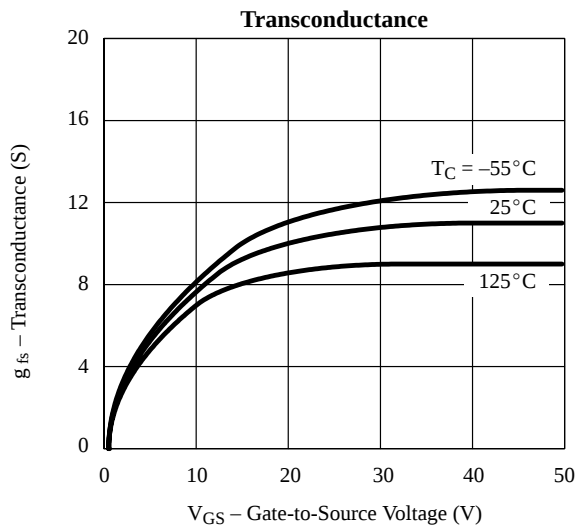
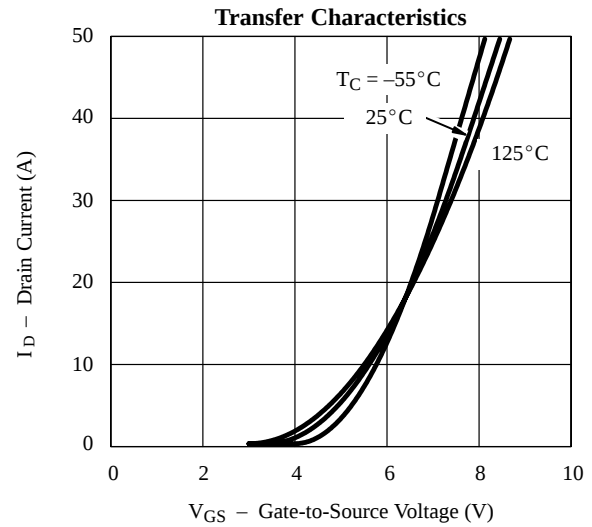
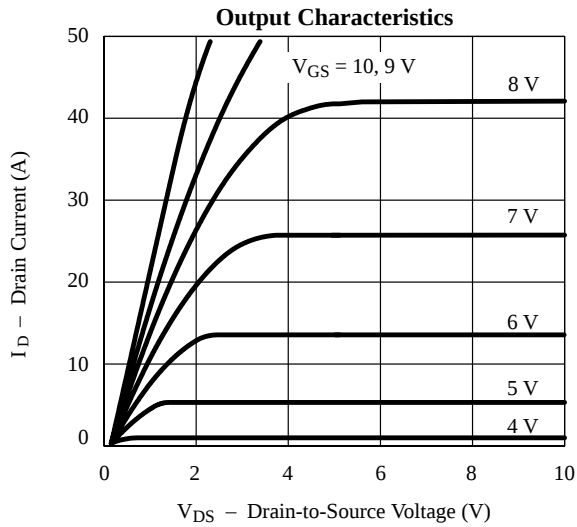
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

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	100	110		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} = 5 V, V _{GS} = 10 V	30			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 18 A		0.045	0.060	Ω
		V _{GS} = 10 V, I _D = 18 A, T _J = 125°C		0.085	0.100	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 18 A	7.0	10.0		S
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		1400		pF
Output Capacitance	C _{oss}			480		
Reverse Transfer Capacitance	C _{rss}			110		
Total Gate Charge ^c	Q _g	V _{DS} = 50 V, V _{GS} = 10 V, I _D = 30 A		35	50	nC
Gate-Source Charge ^c	Q _{gs}			10	19	
Gate-Drain Charge ^c	Q _{gd}			15	25	
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = 50 V, R _L = 1.67 Ω I _D ≈ 30 A, V _{GEN} = 10 V, R _G = 4.7 Ω		10	30	ns
Rise Time ^c	t _r			80	120	
Turn-Off Delay Time ^c	t _{d(off)}			30	60	
Fall Time ^c	t _f			15	30	
Source-Drain Diode Ratings and Characteristics (T _C = 25°C)						
Continuous Current	I _S				30	A
Pulsed Current	I _{SM}				120	
Forward Voltage ^b	V _{SD}	I _F = 30 A, V _{GS} = 0 V			1.8	V
Reverse Recovery Time	t _{rr}			130		ns
Reverse Recovery Charge	Q _{rr}			0.45		μC

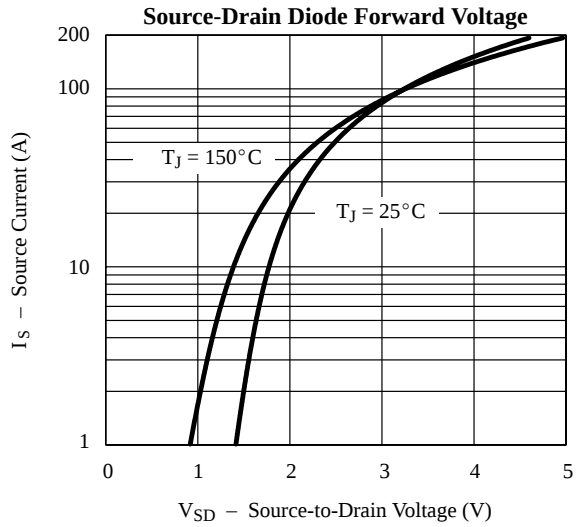
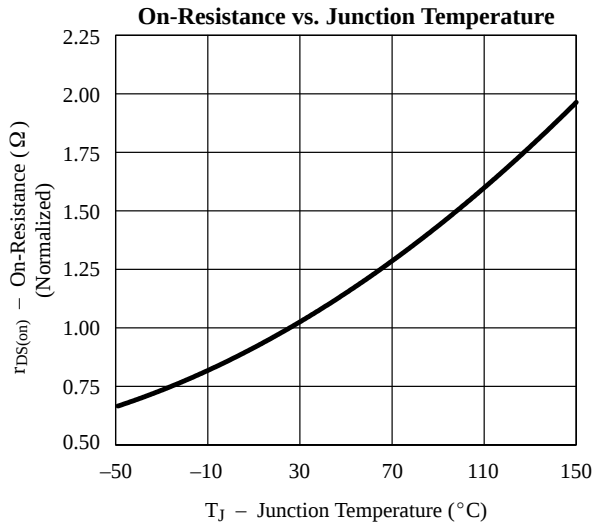
Notes:

- 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)



Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings

