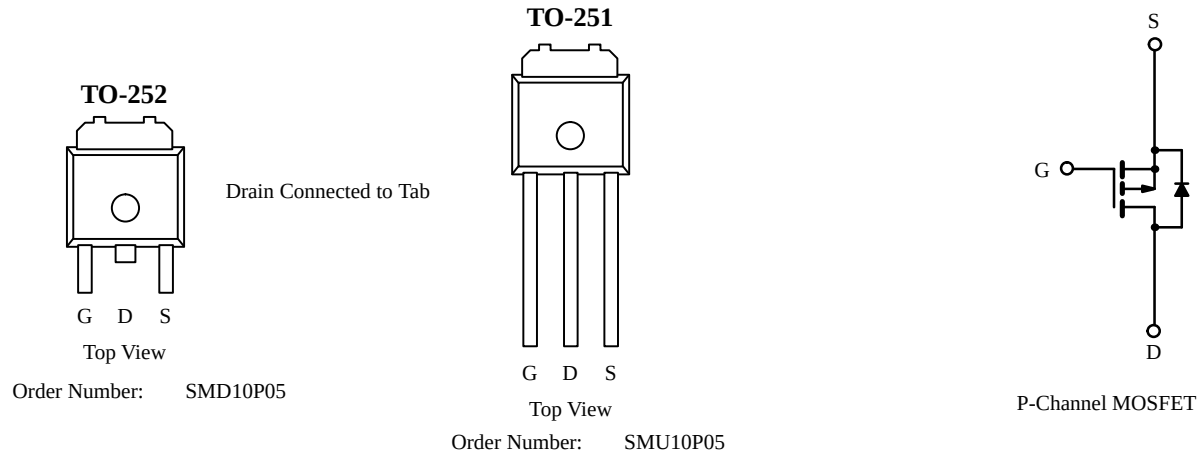


P-Channel Enhancement-Mode Transistors

Product Summary

$V_{(BR)DSS}$ (V)	$r_{DS(on)}$ (Ω)	I_D^a (A)
–50	0.28	–10



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	–50	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ^b	$T_A = 25^\circ\text{C}$	–2.0	A
	$T_A = 100^\circ\text{C}$	–1.3	
Pulsed Drain Current (maximum current limited by package)	I_{DM}	–16	
Power Dissipation	$T_C = 25^\circ\text{C}$	40	W
	$T_A = 25^\circ\text{C}$	2.0 ^b	
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 Free Air, PC Board Mount ^b	R_{thJA}	50	60	$^\circ\text{C/W}$
Junction-to-Ambient Free Air, Vertical Mount		50	60	
Junction-to-Case	R_{thJC}	2.3	3.0	

Notes:

- Calculated Rating for $T_C = 25^\circ\text{C}$, for comparison purposes only. This cannot be used as continuous rating (see Absolute Maximum Ratings and Typical Characteristics).
- Surface mounted on PC board or mounted vertically in free air.

Specifications (T_J = 25 °C Unless Otherwise Noted)

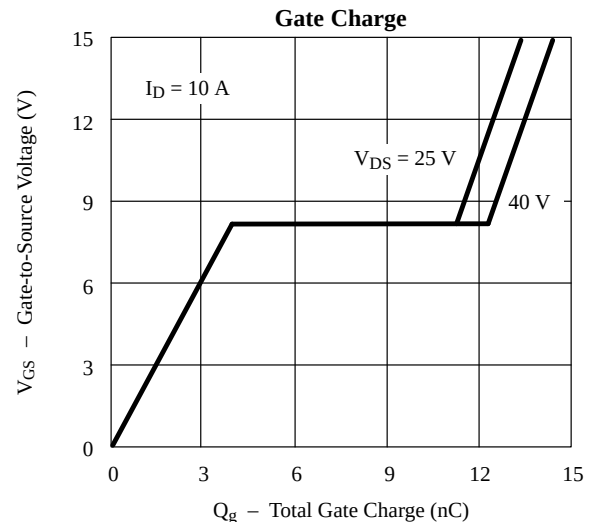
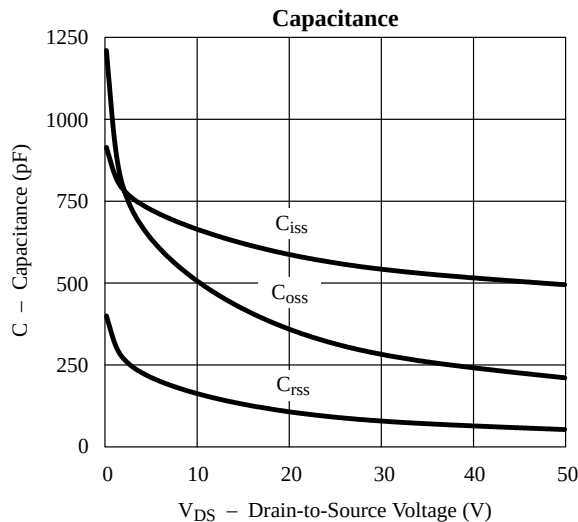
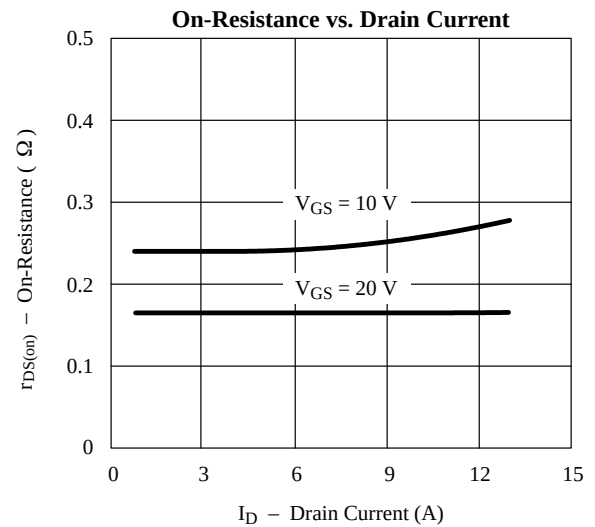
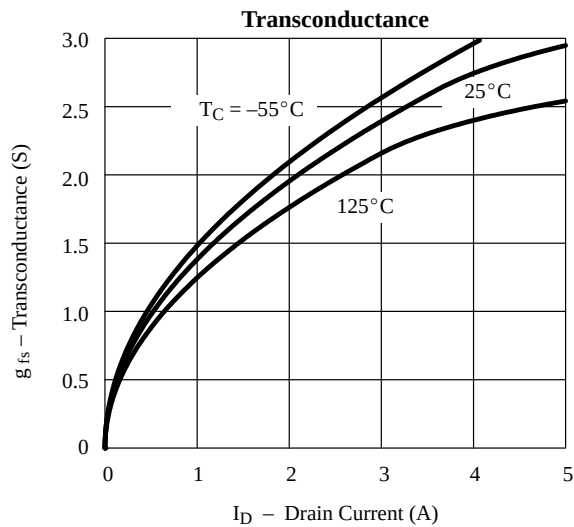
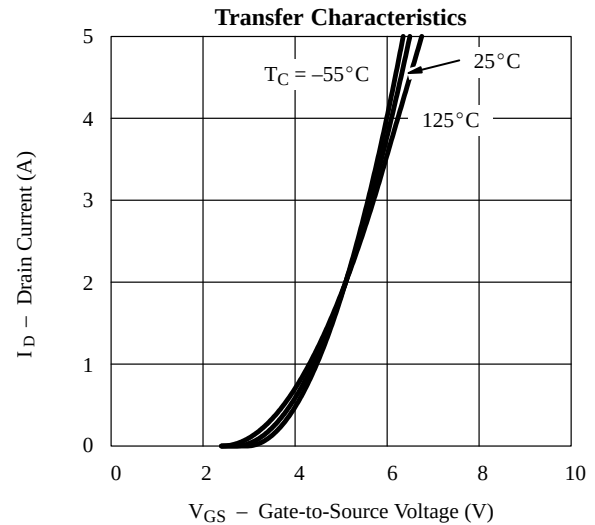
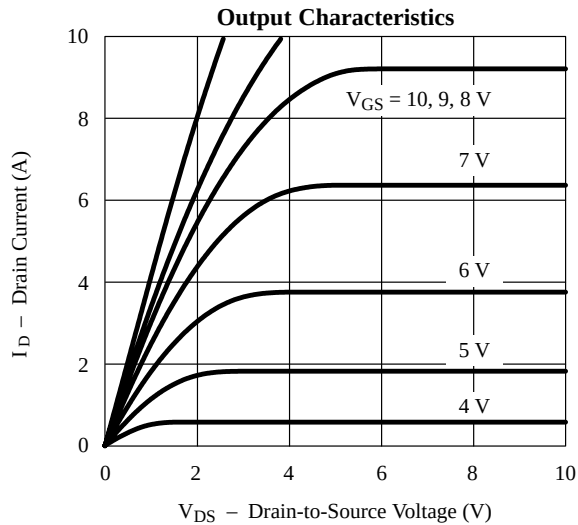
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -250 μA	-50			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-2.0		-4.0	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -40 V, V _{GS} = 0 V			-25	μA
		V _{DS} = -40 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	-10			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = -10 V, I _D = -5 A		0.25	0.28	Ω
		V _{GS} = -10 V, I _D = -5 A, T _J = 125°C		0.4	0.50	
Forward Transconductance ^b	g _{fs}	V _{DS} = -15 V, I _D = -5 A	1.0	3		S
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = -25 V, f = 1 MHz		530		pF
Output Capacitance	C _{oss}			325		
Reverse Transfer Capacitance	C _{rss}			85		
Total Gate Charge ^c	Q _g	V _{DS} = -25 V, V _{GS} = -10 V, I _D = -10 A		13	20	nC
Gate-Source Charge ^c	Q _{gs}			3.6	5.0	
Gate-Drain Charge ^c	Q _{gd}			9	12.0	
Turn-On Delay Time ^c	t _{d(on)}	V _{DD} = -30 V, R _L = 3 Ω I _D ≈ -10 A, V _{GEN} = -10 V, R _G = 25 Ω		10	30	ns
Rise Time ^c	t _r			50	95	
Turn-Off Delay Time ^c	t _{d(off)}			25	90	
Fall Time ^c	t _f			50	75	
Source-Drain Diode Ratings and Characteristics						
Continuous Current	I _S				-2.0	A
Pulsed Current	I _{SM}				-24	
Forward Voltage ^b	V _{SD}	I _F = -2 A, V _{GS} = 0 V			-2.3	V
Reverse Recovery Time	t _{rr}	I _F = -2 A, dI _F /dt = 100 A/μs		70		ns
Reverse Recovery Charge	Q _{rr}			0.07		μC

Notes:

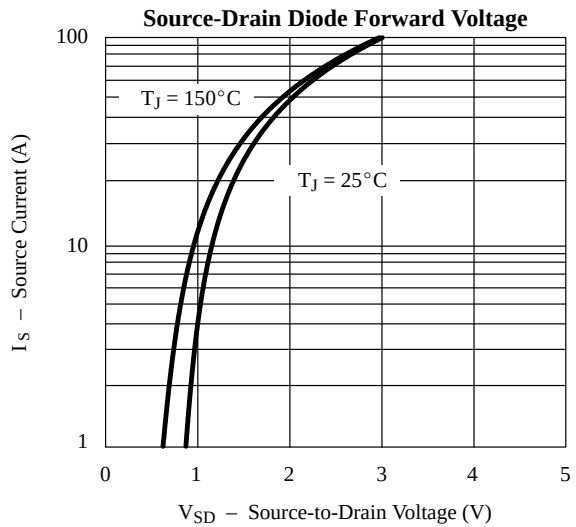
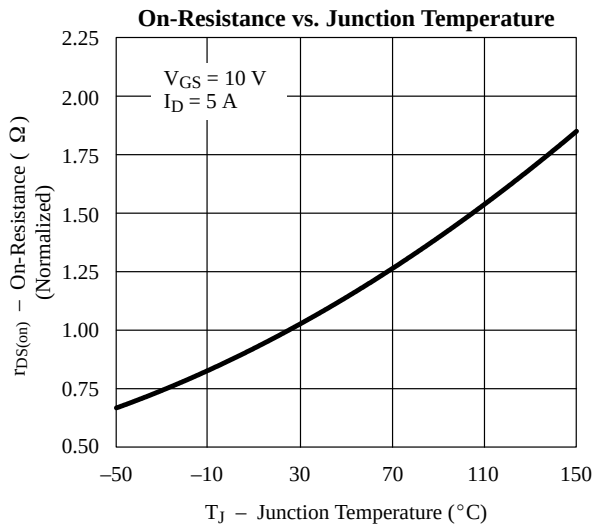
- For design aid only; not subject to production testing.
- Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- Independent of operating temperature.

Typical Characteristics (25°C Unless Otherwise Noted)

Negative signs omitted for clarity.



Typical Characteristics (25°C Unless Otherwise Noted)



Thermal Ratings

