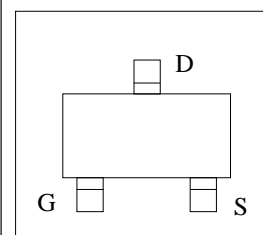
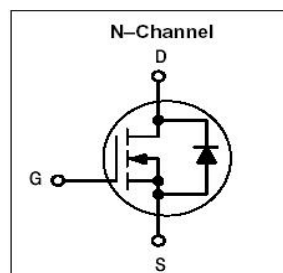
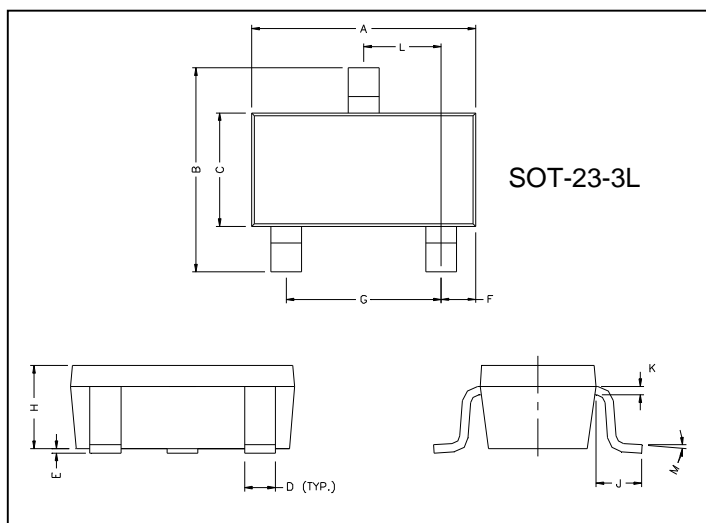


20V N-Channel Enhancement Mode MOSFET

FEATURE

- 20V/4.0A, $R_{DS(ON)} = 55m\Omega$
@ $V_{GS} = 4.5V$
- 20V/3.4A, $R_{DS(ON)} = 70m\Omega$
@ $V_{GS} = 2.5V$
- 20V/2.8A, $R_{DS(ON)} = 90m\Omega$
@ $V_{GS} = 1.8V$

Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.65	2.95	H	1.00	1.30
C	1.50	1.70	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	4.0	A
Pulsed Drain Current	I_{DM}	10	
Maximum Power Dissipation	P_D	1.25	W
		0.8	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted)	$R_{\theta JA}$	105	°C/W

**20V N-Channel Enhancement Mode MOSFET****ABSOLUTE MAXIMUM RATINGS** (Ta = 25 Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	20	V
Gate-Source Voltage		V _{GSS}	+/-12	V
Continuous Drain Current (T _J =150)	T _A =25	I _D	4.0	A
	T _A =70		3.4	
Pulsed Drain Current		I _{DM}	10	A
Continuous Source Current (Diode Conduction)		I _S	1.6	A
Power Dissipation	T _A =25	P _D	1.25	W
	T _A =70		0.8	
Operation Junction Temperature		T _J	150	
Storage Temperature Range		T _{STG}	-55/150	
Thermal Resistance-Junction to Ambient		R _{JA}	105	/W



20V N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	0.4		1.0	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=+/-12V$			100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			1	uA
		$V_{DS}=-20V, V_{GS}=0V$ $T_J=55$			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS} = -5V, V_{GS}=-4.5V$	6.0			A
Drain-source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=4.0A$		0.04	0.055	
		$V_{GS}=2.5V, I_D=3.4A$		0.05	0.07	
		$V_{GS}=1.8V, I_D=2.8A$		0.065	0.090	
Forward Transconductance	g_{fs}	$V_{DS}=5V, I_D=3.6V$		10		S
Diode Forward Voltage	V_{SD}	$I_S=1.6A, V_{GS}=0V$		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=6V, V_{GS}=4.5V$ $I_D = 2.8A$		4.8	8	nC
Gate-Source Charge	Q_{gs}			1.0		
Gate-Drain Charge	Q_{gd}			1.0		
Input Capacitance	C_{iss}	$V_{DS}=6V, V_{GS}=0V$ $F=1MHz$		485		pF
Output Capacitance	C_{oss}			85		
Reverse Transfer Capacitance	C_{rss}			40		
Turn-On Time	$t_{d(on)}$	$V_{DD}=6V, R_L=6$ $I_D=1A, V_{GEN}=4.5V$ $R_G=6$		10	25	nS
	t_r			13	60	
Turn-Off Time	$t_{d(off)}$			18	70	
	t_f			15	60	

20V N-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS (25 Unless noted)

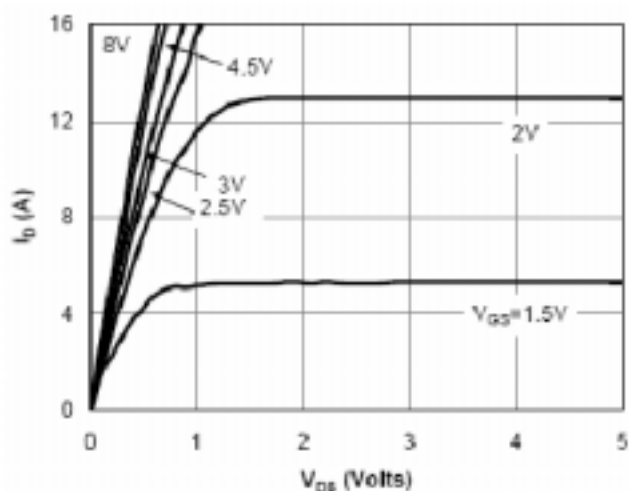


Fig 1: On-Region Characteristics

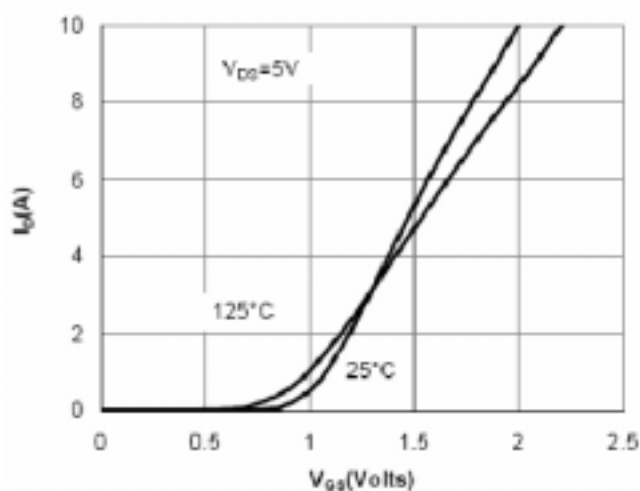


Figure 2: Transfer Characteristics

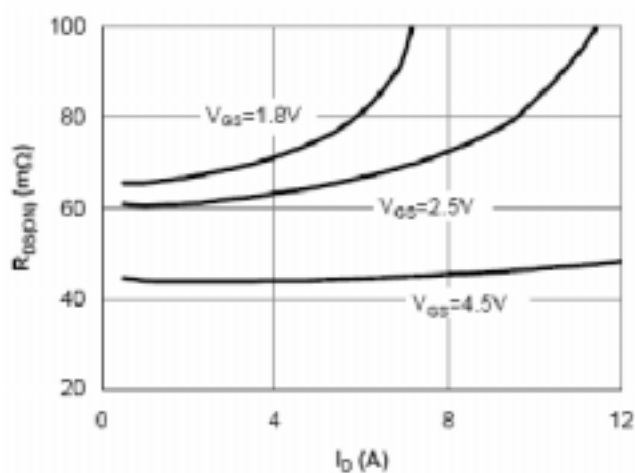


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

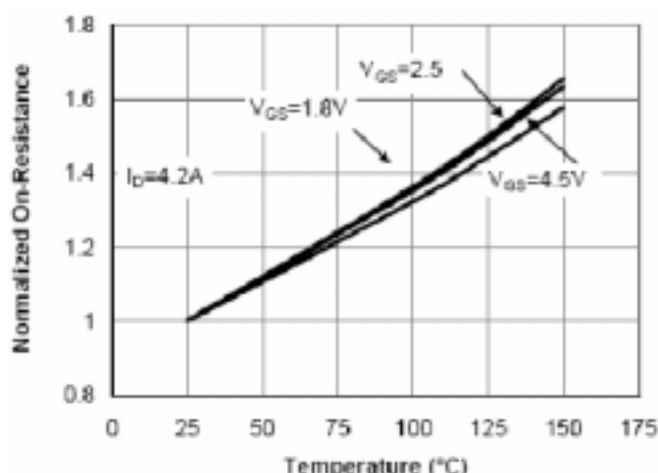


Figure 4: On-Resistance vs. Junction Temperature

20V N-Channel Enhancement Mode MOSFET

4.0A

TYPICAL CHARACTERISTICS (25 Unless noted)

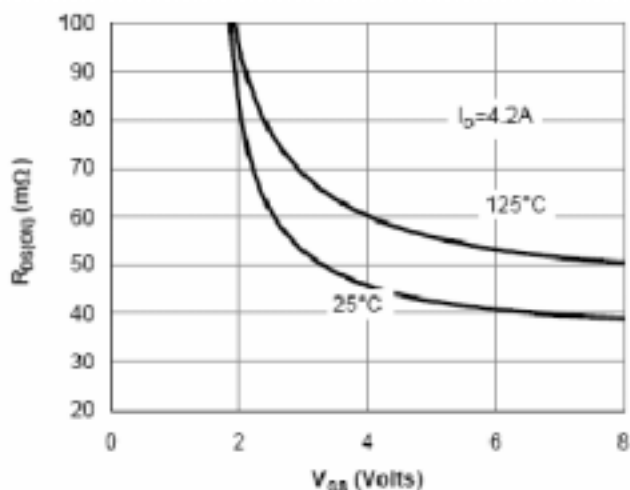


Figure 5: On-Resistance vs. Gate-Source Voltage

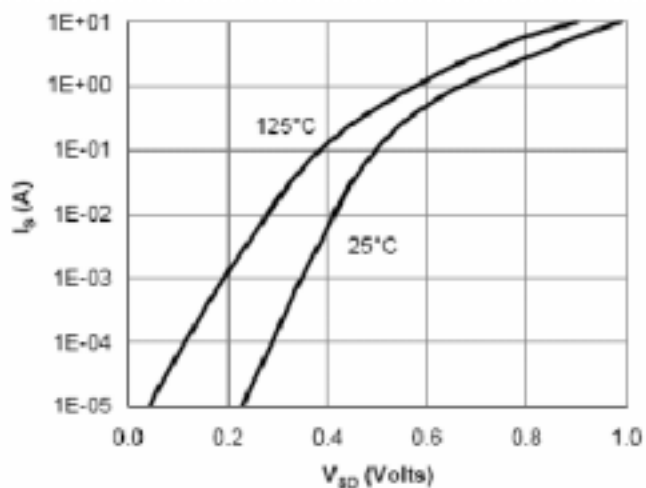


Figure 6: Body-Diode Characteristics

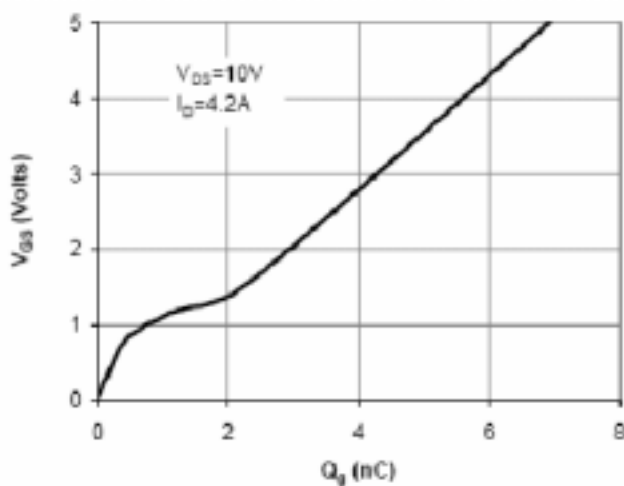


Figure 7: Gate-Charge Characteristics

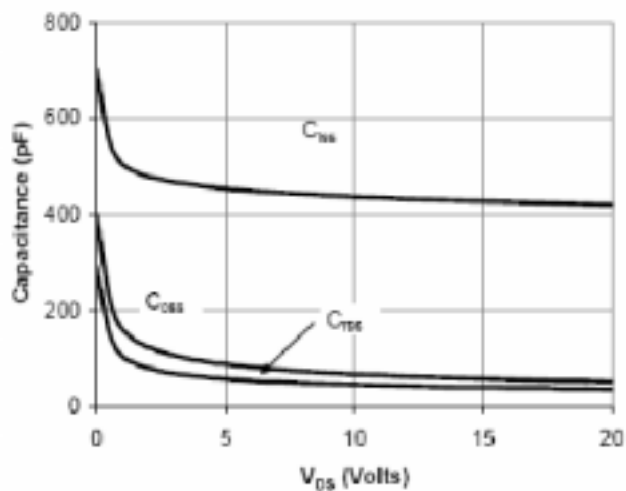


Figure 8: Capacitance Characteristics

20V N-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS

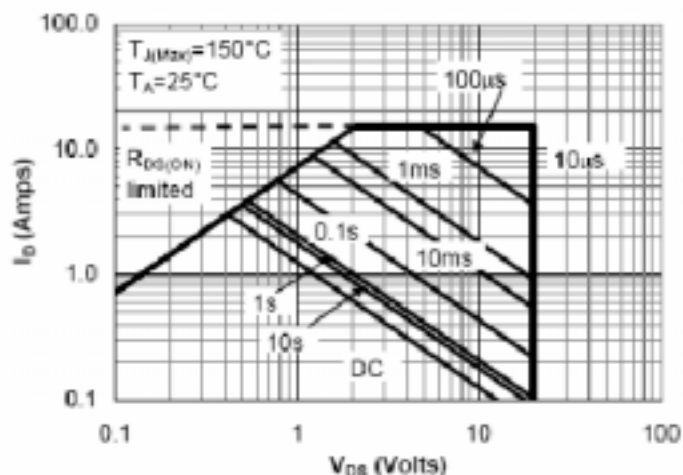


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

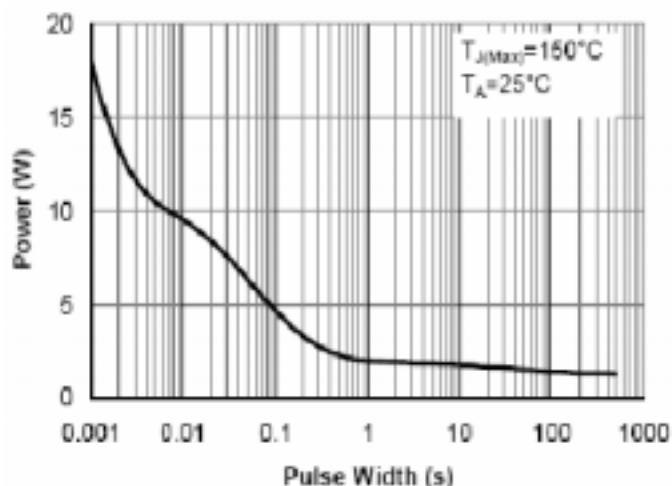


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

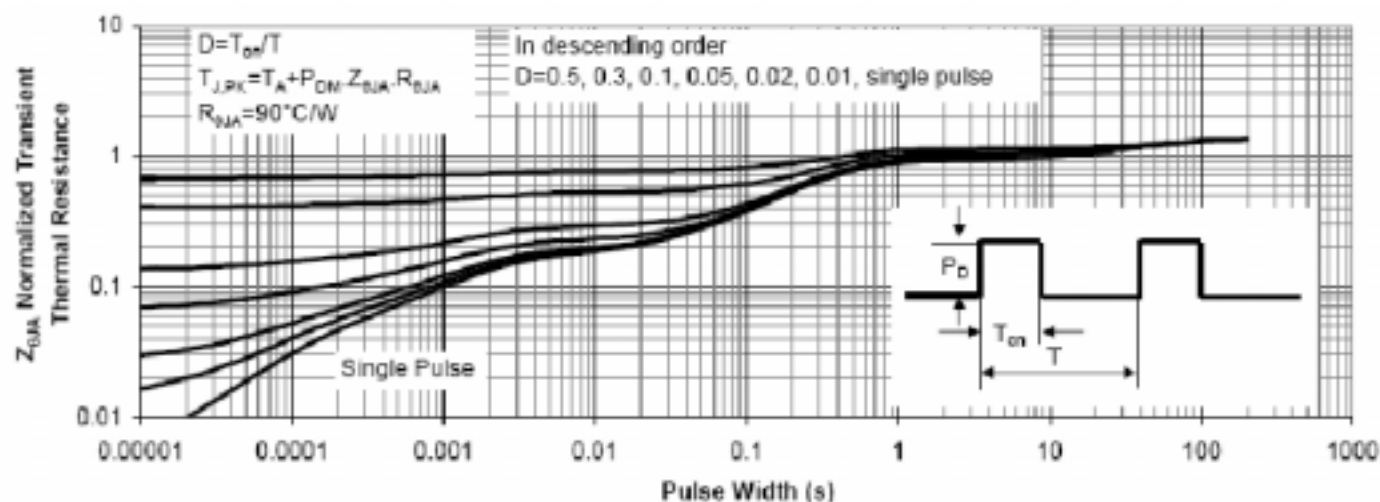


Figure 11: Normalized Maximum Transient Thermal Impedance