

40V N-Channel Enhancement Mode MOSFET

VDS= 40V

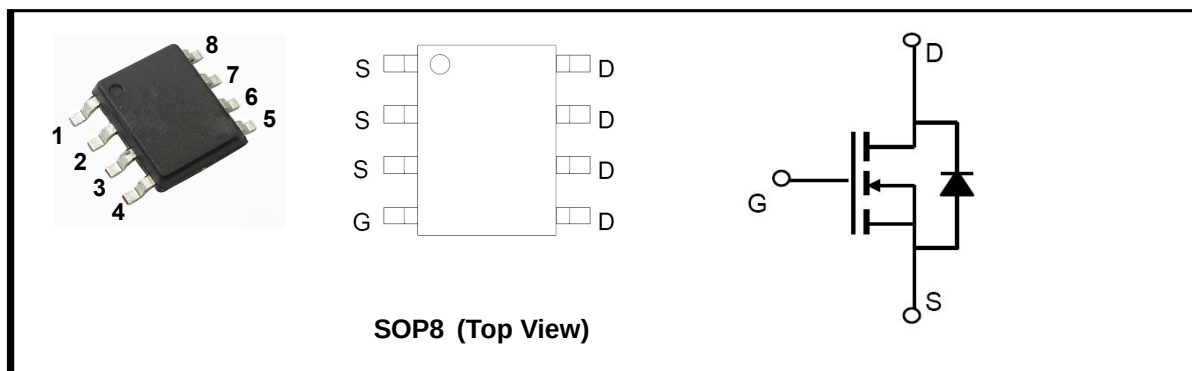
RDS(ON), Vgs@ 10.0V, Ids@15.0A<8.0mΩ

RDS(ON), Vgs@ 4.5V, Ids@ 10.0A< 13.0mΩ

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance



SOP8 (Top View)

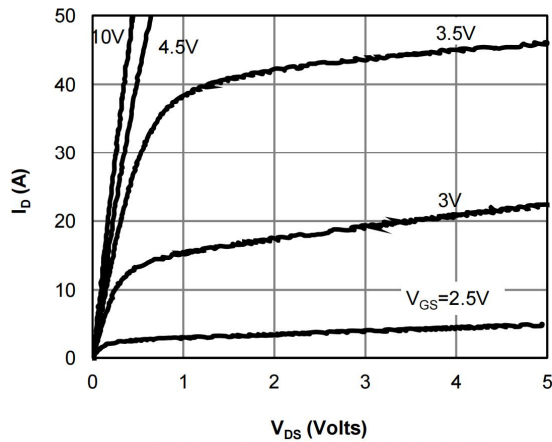
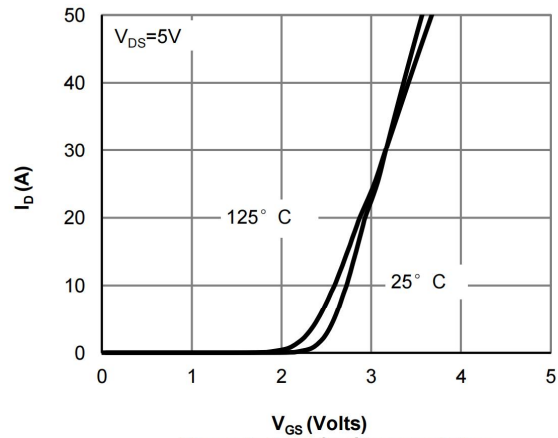
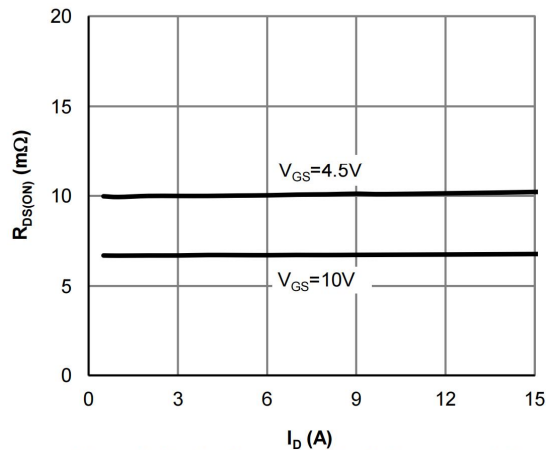
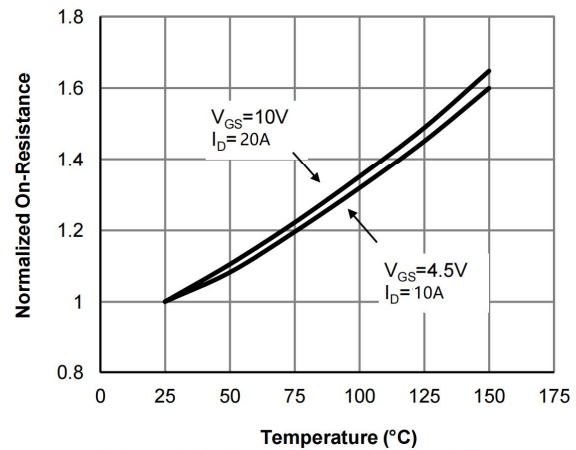
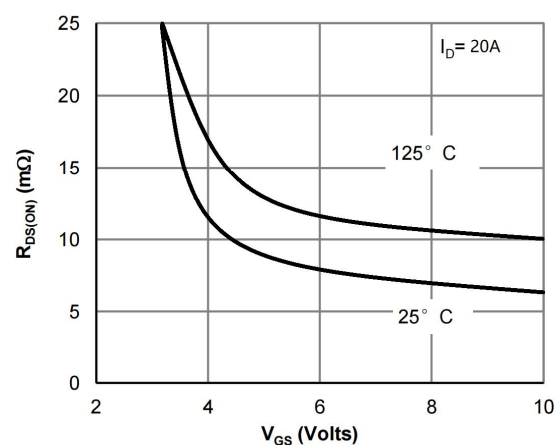
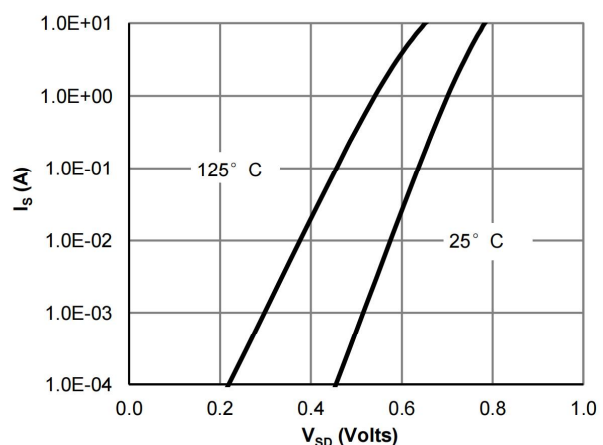
Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	40	V
Drain Current		I _D (Tc=25°C)	15	A
Drain Current - Pulsed		I _{DM}	68	A
Gate-Source Voltage		V _{GSS}	±20	V
Single Pulsed Avalanche Energy		E _{AS}	67.6	mJ
Avalanche Current		I _{AS}	13	A
Power Dissipation		P _D (Tc=25°C)	3.1	W
Operating and Storage Temperature Range		T _J , T _{stg}	-55 to 150	°C
Junction-to-Ambient	t ≤ 10	R _{θJA}	40	°C/W
Junction-to-Ambient	Steady-State		75	
Junction-to-Lead	Steady-State	R _{θJL}	24	

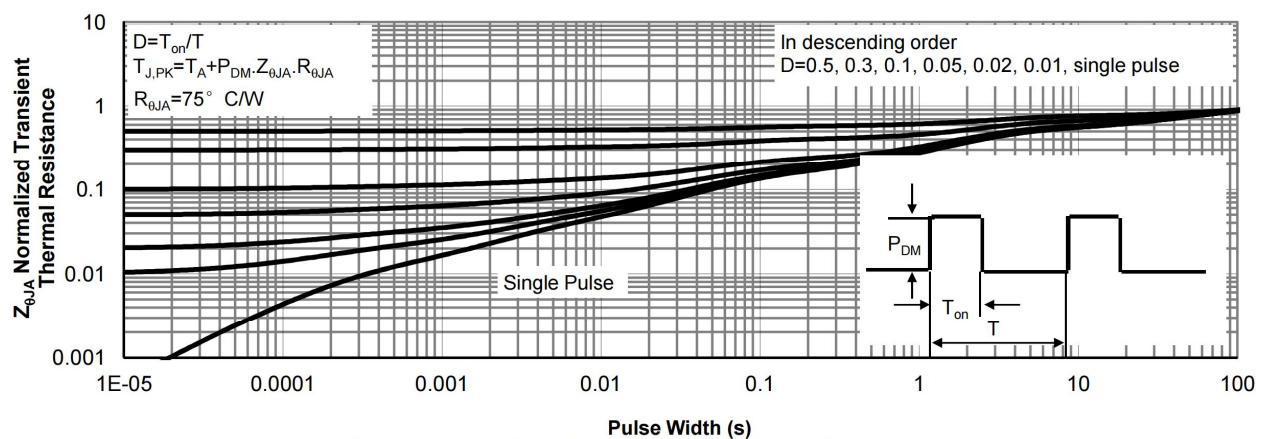
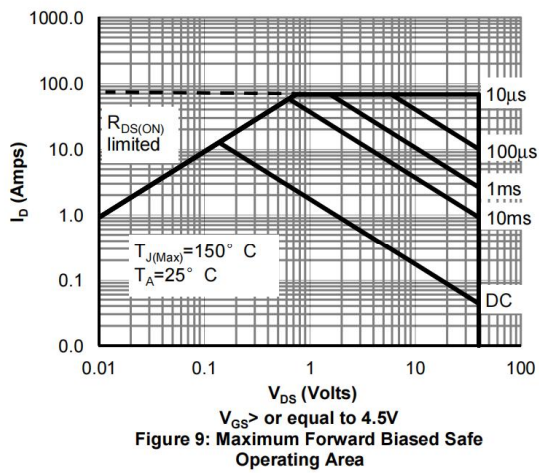
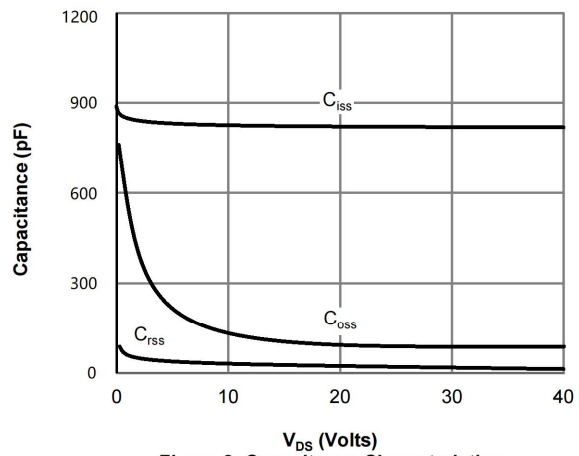
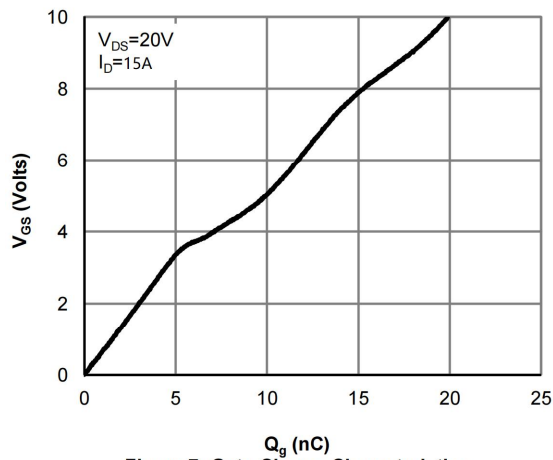
Model	Marking	Package	shipping
M080N04SC	080N04	SOP-8	4000/Tape&Reel

CHANNEL Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40	47		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.4	8	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		10	13	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		850		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			30		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		1.9		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=15A$		21		nC
Total Gate Charge	$Q_{g(4.5V)}$			8.6		
Gate Source Charge	Q_{gs}			5.7		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.18\Omega$ $R_{GEN}=3.0\Omega$		7.5		ns
Turn-On Rise Time	t_r			2.1		
Turn-Off Delay Time	$t_{d(off)}$			23		
Turn-Off Fall Time	t_f			3		

N-CHANNEL Electrical Characteristic Curve

Figure 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

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

Figure 6: Body-Diode Characteristics

N-CHANNEL Electrical Characteristic Curve

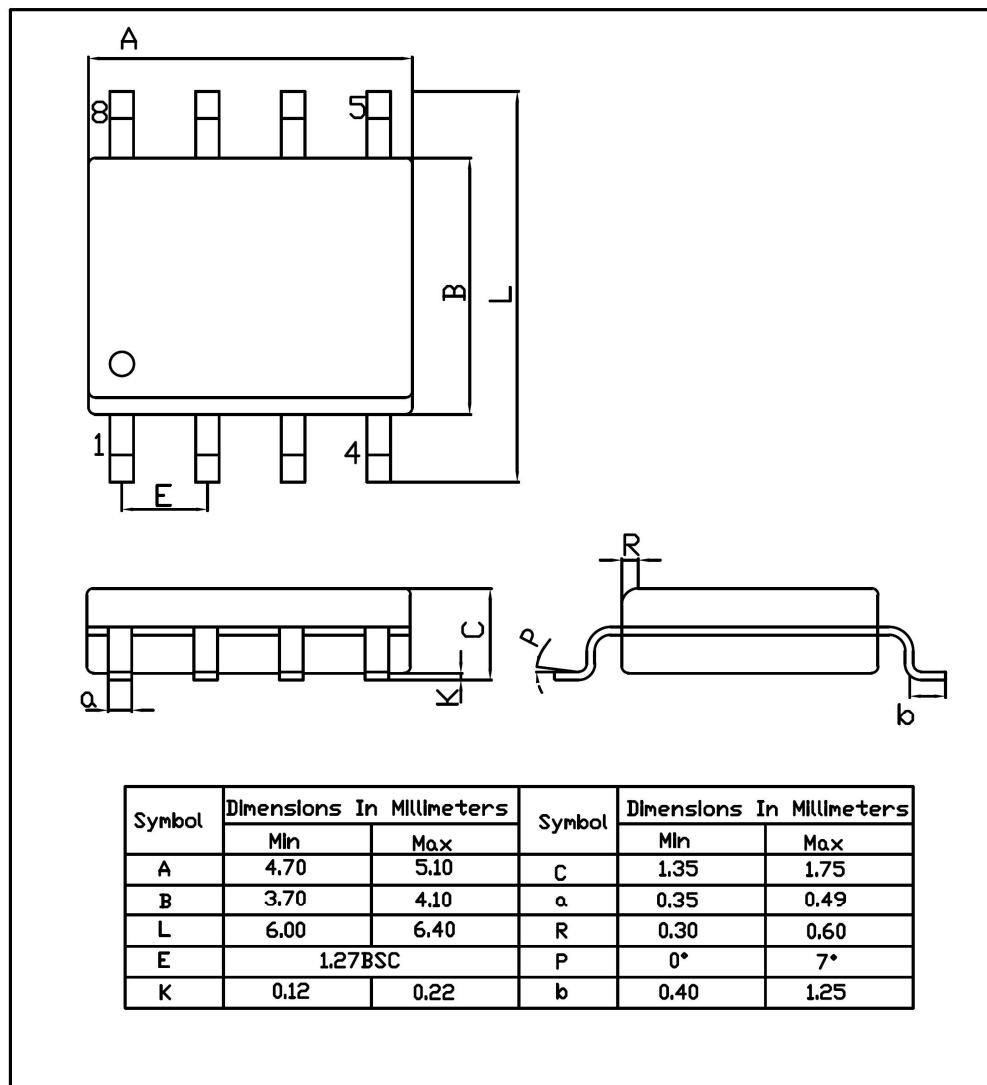


Dimension outline

Unit:mm

SOP-8

Unit:mm



Suggested Pad Layout UNIT: mm

