



SOP8 Plastic-Encapsulate MOSFETS

CCM360P06N P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	25mΩ@-10V	-8A

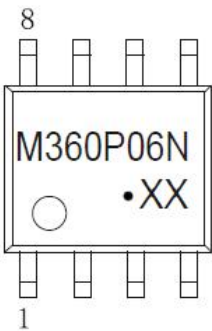
Feature

- Trench Technology Power MOSFET
- Low drain-source ON-resistance
- Low gate charge
- Low gate resistance
- AEC-Q101 Qualified

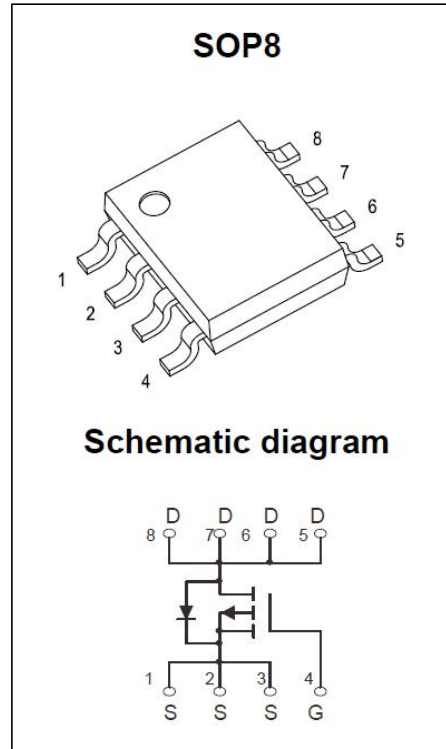
Application

- Power switching applications

MARKING



M360P06N = Device Code
 XX = Date Code
 Solid Dot = Green Indicator



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-60	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,5}	I_D	-8	A
Pulsed Drain Current ²	I_{DM}	-32	A
Power Dissipation ^{4,5}	P_D	3	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	50	°C/W
Junction Temperature	T_J	175	°C
Storage Temperature	T_{STG}	-55~ +175	°C

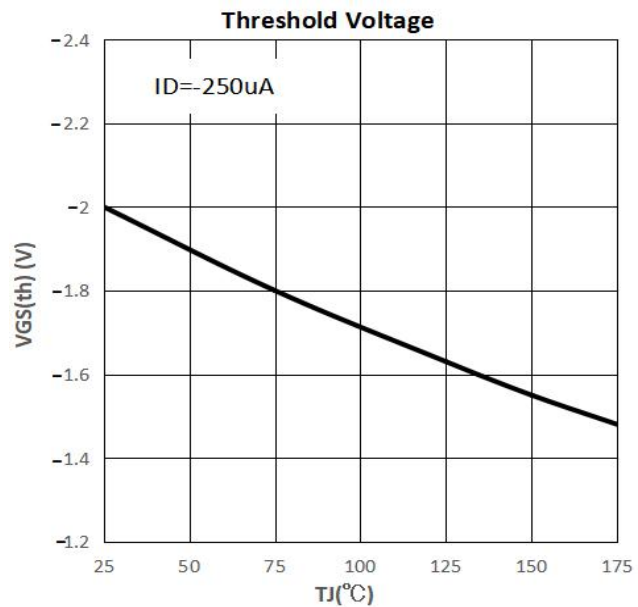
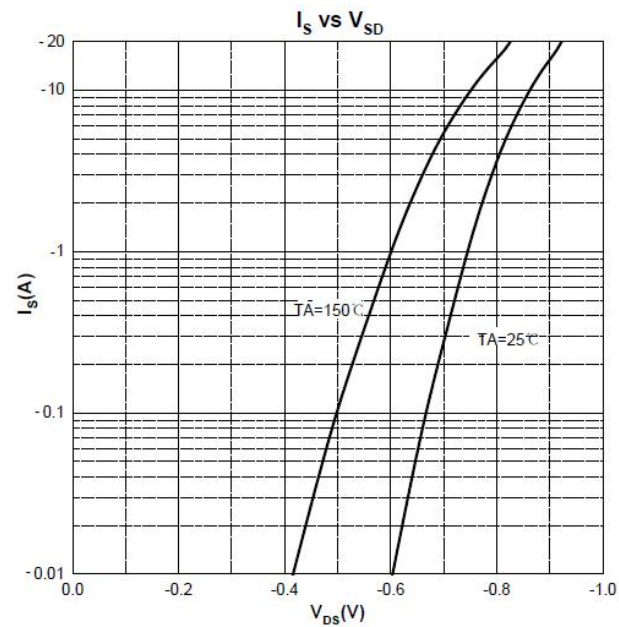
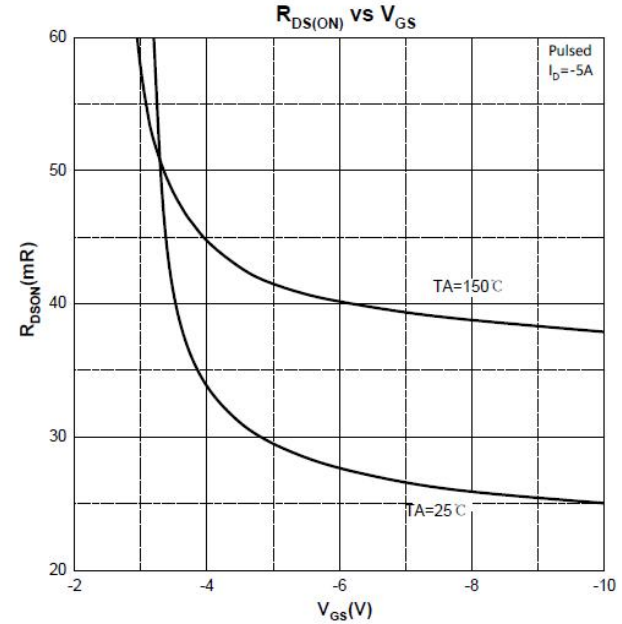
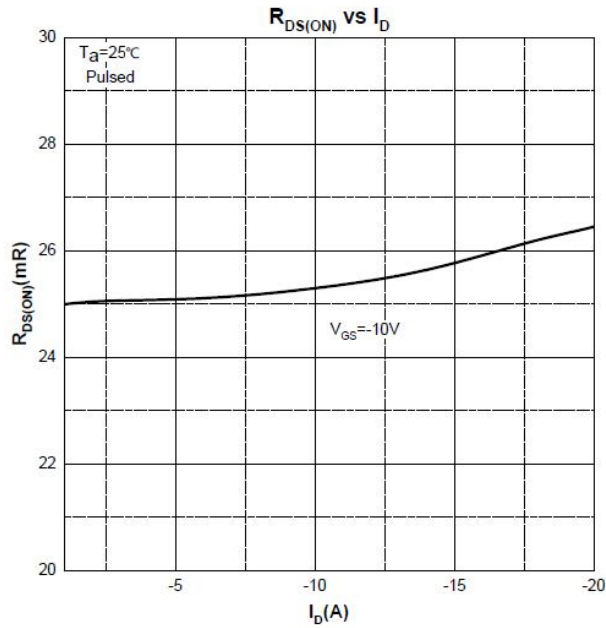
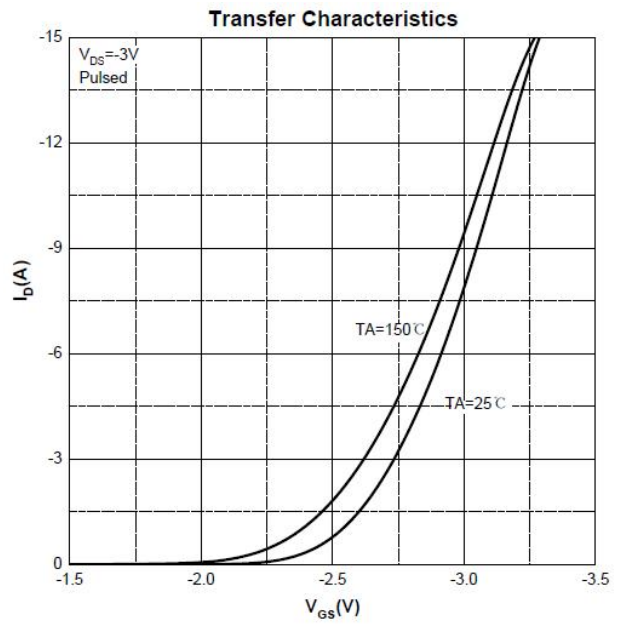
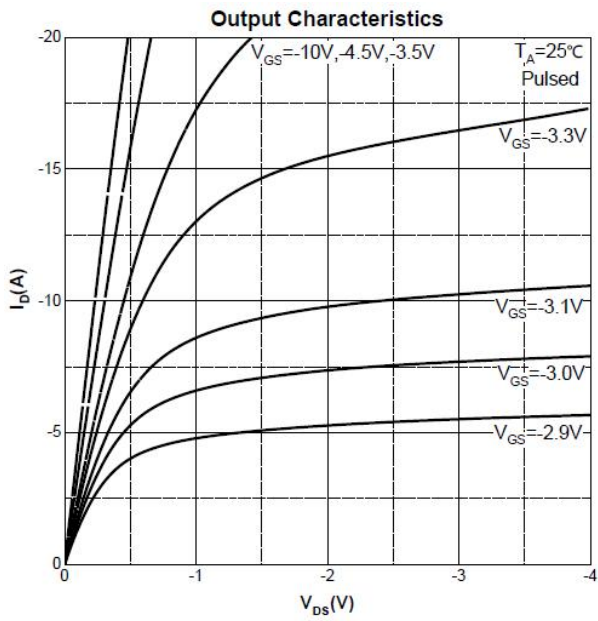
MOSFET ELECTRICAL CHARACTERISTICS(TC=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -48V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-2.0	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -6A$		25	36	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -6A$	10			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$		3018		pF
Output Capacitance	C_{oss}			173		
Reverse Transfer Capacitance	C_{rss}			163		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		3.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -30V, V_{GS} = -10V, I_D = -8A$		57		nC
Gate-source Charge	Q_{gs}			12		
Gate-drain Charge	Q_{gd}			12.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30V, V_{GS} = -10V,$ $R_L = 4\Omega, R_G = 3\Omega$		11		ns
Turn-on Rise Time	t_r			7.4		
Turn-off Delay Time	$t_{d(off)}$			48		
Turn-off Fall Time	t_f			15.2		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -5.0A$			-1.2	V

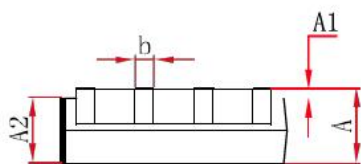
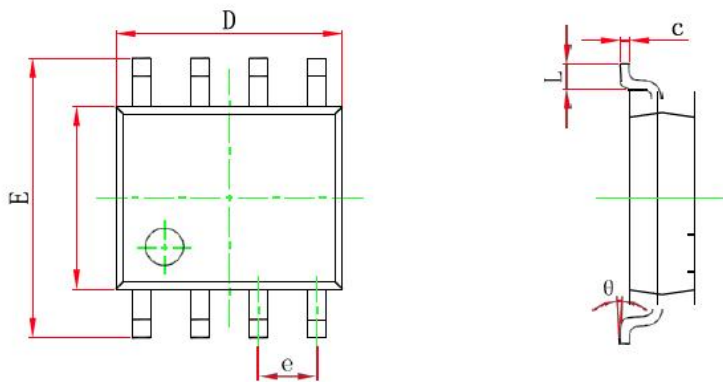
Notes :

1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. The power dissipation PD is limited by $T_J(MAX) = 150^\circ C$.
5. Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ C$

Typical Characteristics

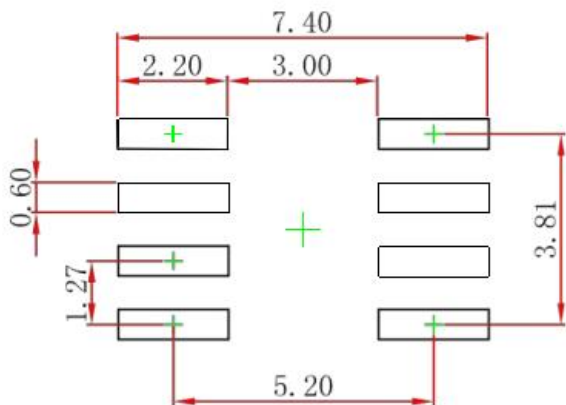


SOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP8 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: 0.5mm.
3. The pad layout is for reference purposes only.

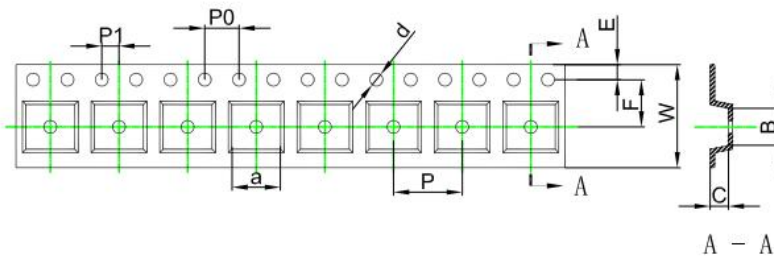
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SOP8 Tape and Reel

SOP8 Embossed Carrier Tape

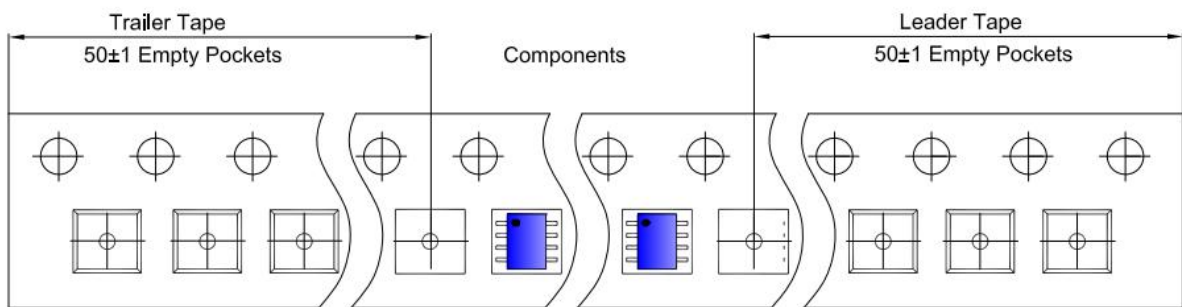


Packaging Description:

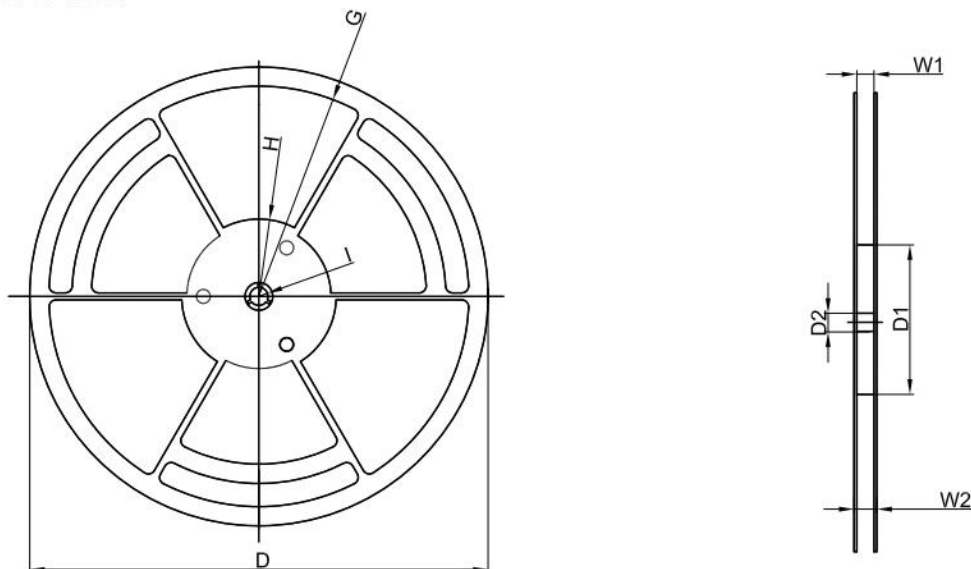
SOP8 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).
ALL DIM IN mm

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOP8 Tape Leader and Trailer



SOP8 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13" Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
4,000 pcs	13 inch	8,000 pcs	360×360×65	64,000 pcs	565×380×390	

Date of change	Rev #	revise content
2022/08/20	A/0	/