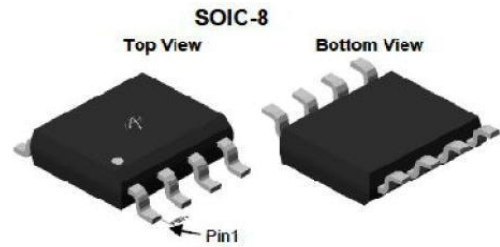


Y2N/655S—60V 10A N-Channel Power MOSFET (2 IN 1)

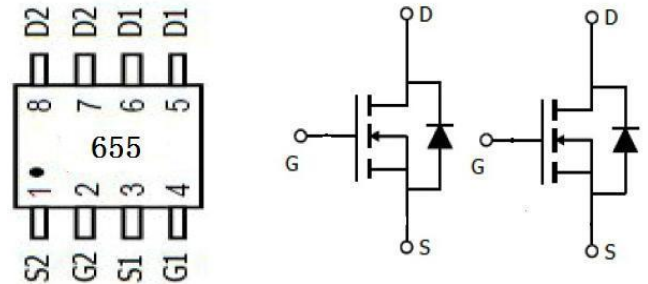
Features

- Proprietary New Trench Technology
- Ultra-low Miller Charge
- $R_{DS(ON)}$, typ. =43m Ω @ $V_{GS}=10V$
- Low Gate Charge Minimize Switching Loss
- Fast Recovery Body Diode



Applications

- High efficiency DC/DC Converters
- Synchronous Rectification
- Motor Drive



Marking Information

Part Number	Package	Marking
Y2N/655S	SOP8	655

Absolute Maximum Ratings

Absolute Maximum Ratings		Ta=25°C unless otherwise noted	
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{GS}	± 20	V
Gate-Source Voltage	V_{DS}	60	V
Continuous Drain Current	I_D	$T_A=25^\circ C$	16.2
		$T_A=70^\circ C$	6.5
Pulsed Drain Current C	I_{DM}	20	A
Avalanche energy L=0.1mH C	E_{AS}, E_{AR}	10	MJ
Power Dissipation	P_D	$T_A=25^\circ C$	31.3
		$T_A=70^\circ C$	3.0
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 155	°C

Caution: Stresses greater than those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device.

Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	4.0	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	42	

Electrical Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=250\mu A, V_{GS}=0V$	60			V
I_{DSS}	Drain-Source leakage current	$V_{DS}=60V, V_{GS}=0V$			5	μA
		$V_{DS}=48V, V_{GS}=0V, T_J = 125^\circ C$			100	
I_{GSS}	Gate-Body leakage current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
ON Characteristics						
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=5A$ [3]		51	66	m Ω
		$V_{GS}=10V, I_D=5A$ [3]		43	55	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.8	3.0	V
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{GS}=0V, V_{DS}=30V, f=1.0MHz$		300		pf
C_{rss}	Reverse Transfer Capacitance			18		
C_{oss}	Output Capacitance			52		
R_G	Gate Series Resistance	$f=1.0MHz$		3.1		Ω
Q_g	Total Gate Charge	$V_{DD}=30V, I_D=5A, V_{GS}=10V$		6.0		nC
Q_{gs}	Gate-to-Source Charge			1.2		
Q_{gd}	Gate-to-Drain(Miller) Charge			1.1		
Resistive Switching Characteristics						
$T_{d(on)}$	Turn-On Delay time	$V_{DD}=30V, I_D=5A, V_{GS}=10V, R_G=6\Omega$		2.0		ns
t_{rise}	Rise Time			5.6		
$T_{d(off)}$	Turn-Off Delay Time			23		
t_{fall}	Fall Time			14		
Source-Drain Body Diode Characteristics						
I_{SD}	Continuous Source Current	Maximum Ratings			2.5	A
I_{SM}	Pulsed Source Current				10	
V_{SD}	Diode Forward Voltage	$I_S=5A, V_{GS}=0V$		0.85	1.2	V
t_{rr}	Reverse Recovery Time	$V_{GS}=0V, I_R=5A, di/dt=100A/\mu s$		29		ns
Q_{rr}	Reverse Recovery Charge			24		nC

Notes:

[1] $T_J=+25^\circ C$ to $+150^\circ C$

[2] Repetitive rating, pulse width limited by both maximum junction temperature.

[3] Pulse width $\leq 380\mu s$; duty cycle $\leq 2\%$.

Typical Characteristics

$T_J=25^{\circ}\text{C}$ unless otherwise specified

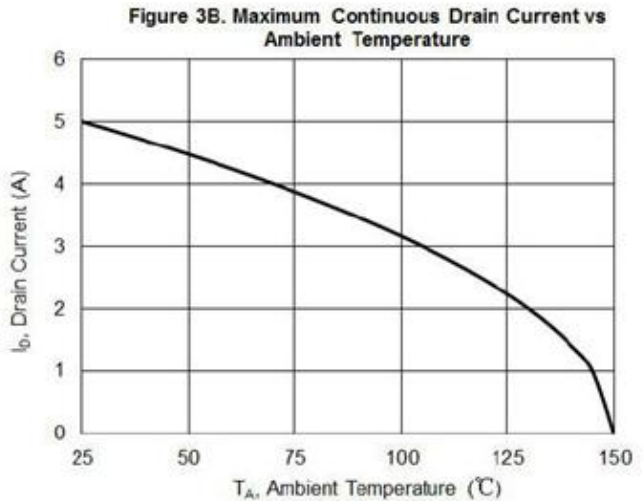
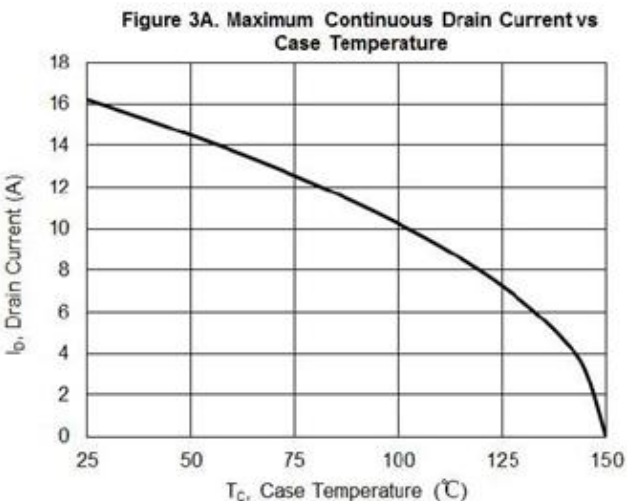
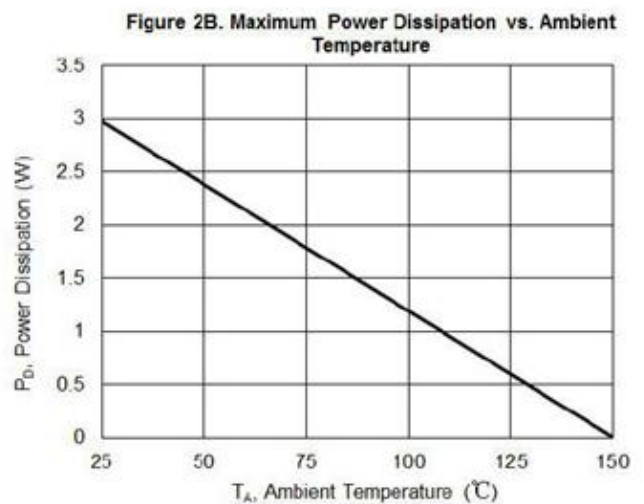
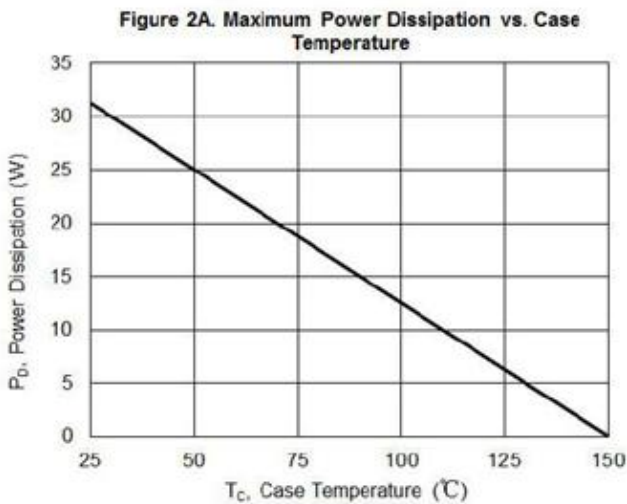
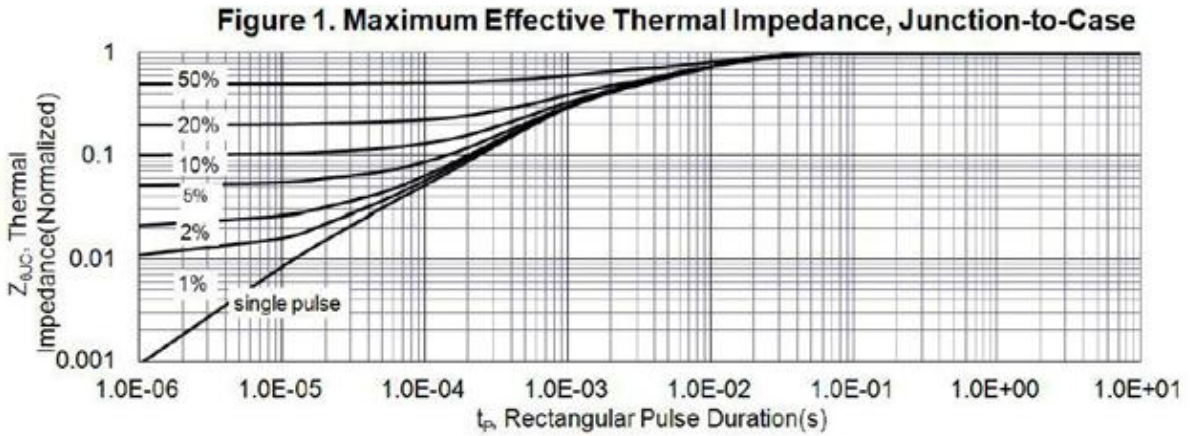


Figure 4. Typical Output Characteristics

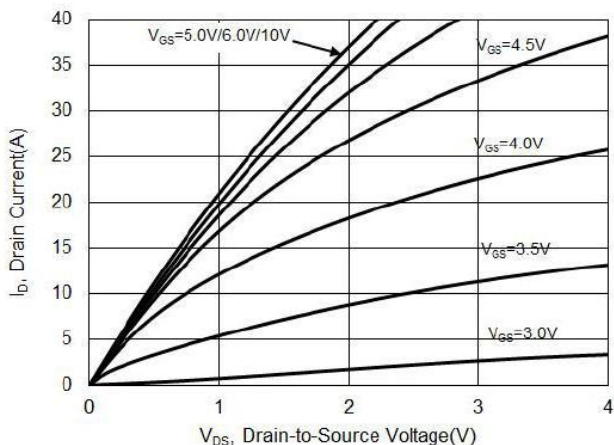


Figure 5. Typical Drain-to-Source ON Resistance vs. Gate Voltage

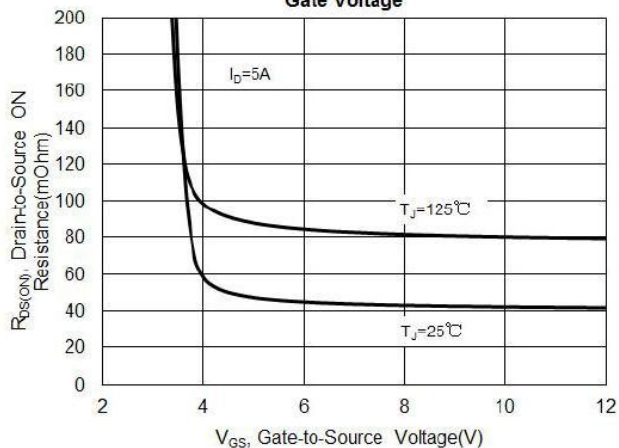


Figure 6. Maximum Peak Current Capability

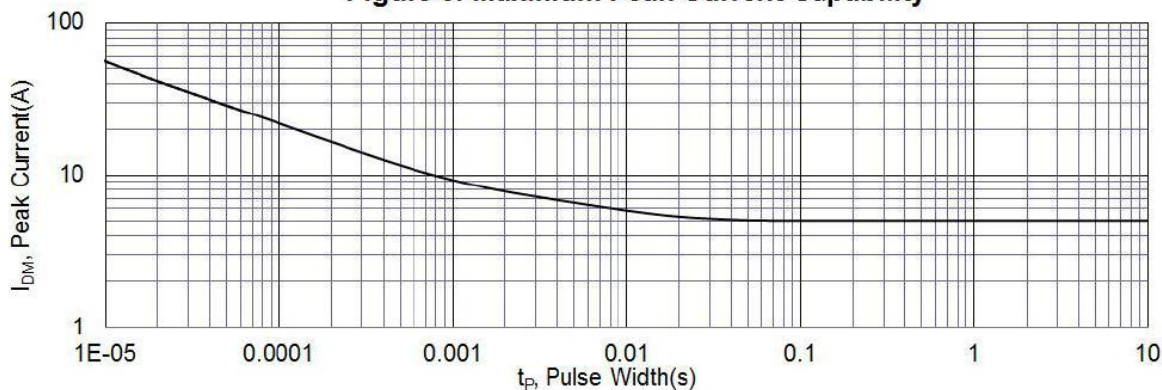


Figure 7. Typical Transfer Characteristics

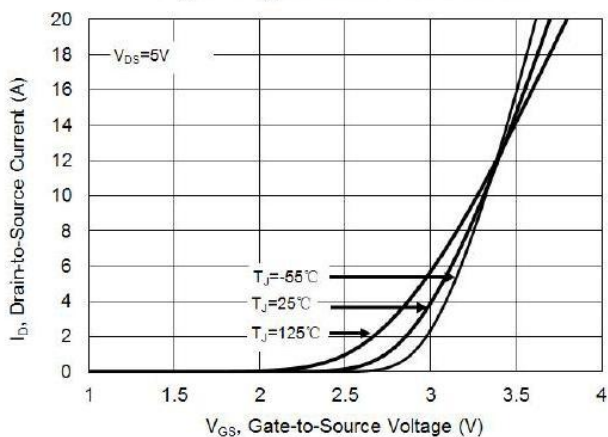


Figure 8. Unclamped Inductive Switching Capability

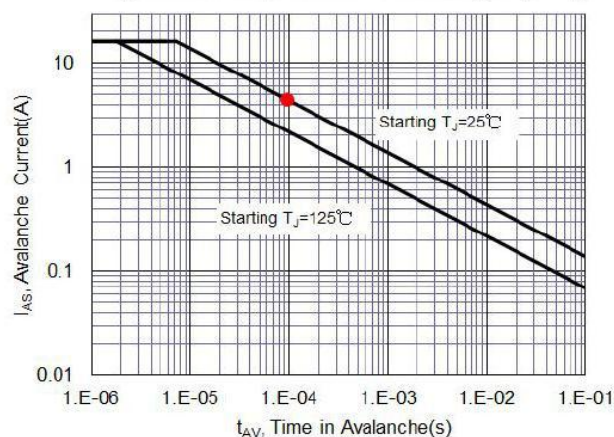


Figure 9. Typical Drain-to-Source ON Resistance

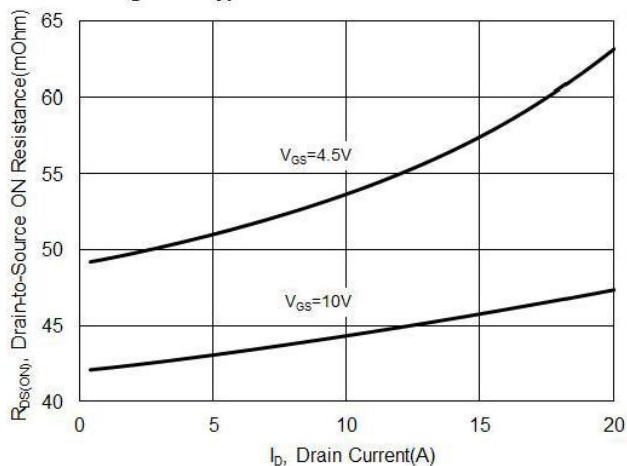


Figure 10. Typical Drain-to-Source On Resistance vs. Junction Temperature

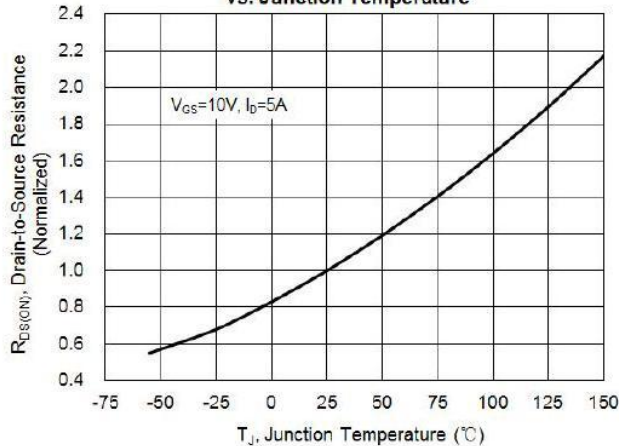


Figure 11. Typical Breakdown Voltage vs. Junction Temperature

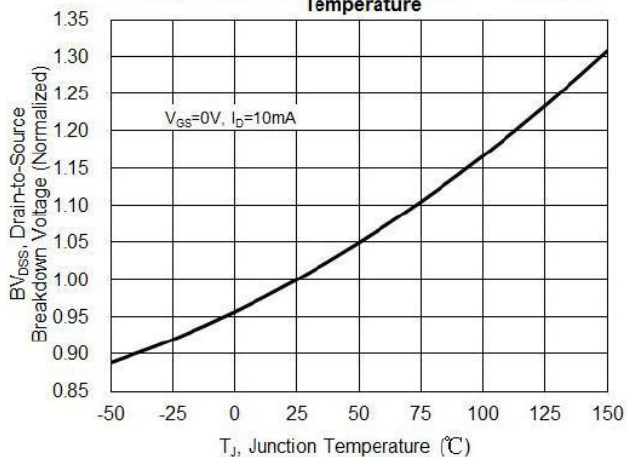


Figure 12. Typical Threshold Voltage vs. Junction Temperature

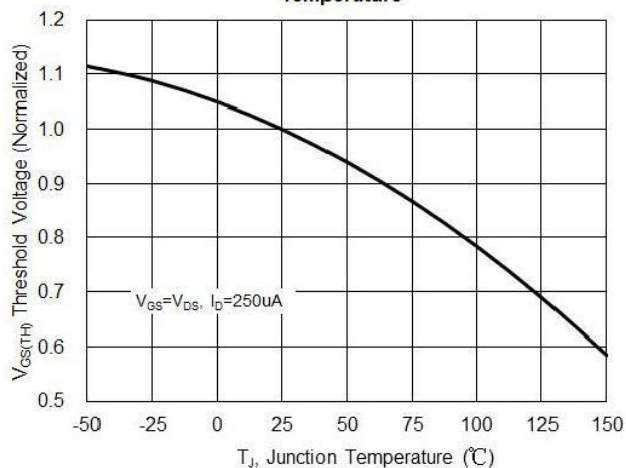


Figure 13. Maximum Forward Safe Operation Area

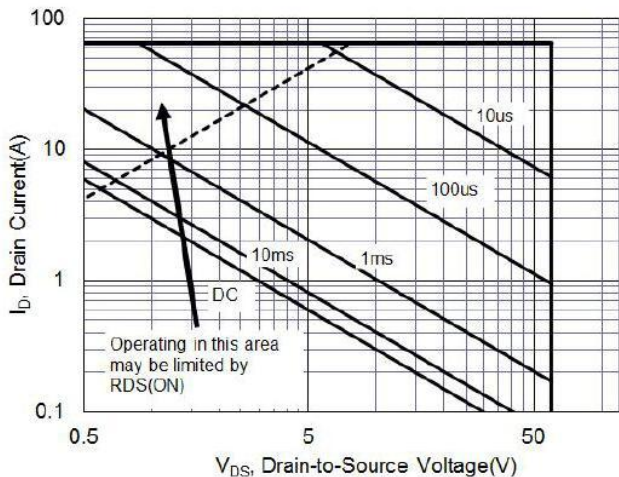


Figure 14. Typical Capacitance vs. Drain-to-Source Voltage

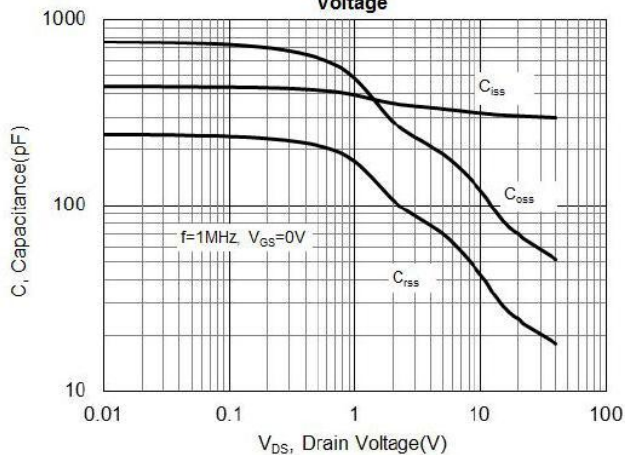


Figure 15. Typical Gate Charge vs. Gate-to-Source Voltage

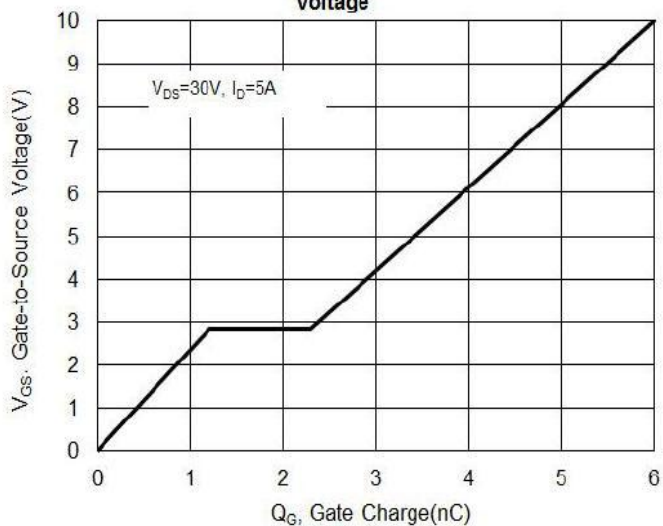
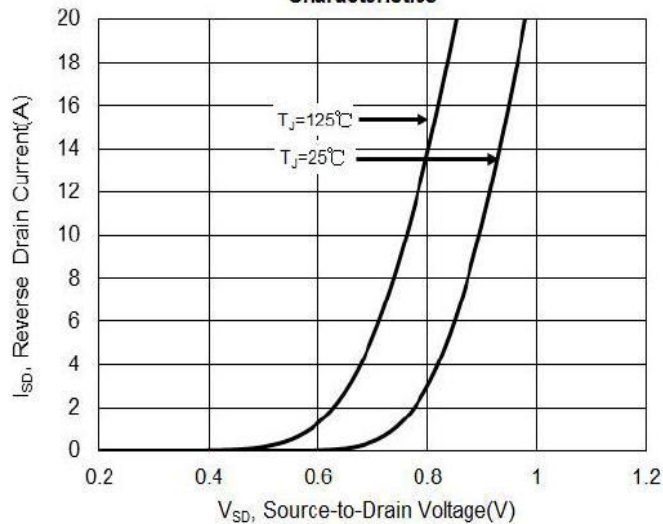


Figure 16. Typical Body Diode Transfer Characteristics



Ordering Information :

订货信息/Ordering Information							
	Y	2	N/	6	55	S	()
公司商标代号 Company symbol							
1:NIL 2:2MOS							
P:P MOS N:N MOS							
负载电压 Load voltage : 6-60V;10-100V; 20-200V ;35-350V;40-400V							
R _{DS(on)} : 55—55mΩ							
S:SOP							
用户特殊编号 Special code							

