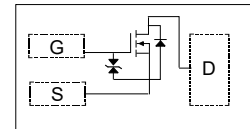
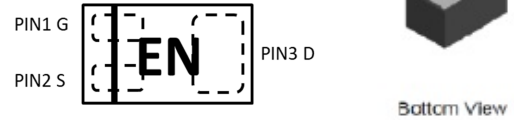


N-Channel Plastic-Encapsulate MOSFET
PRIMARY CHARACTERISTICS

$BV_{DSS}(V)$	$R_{DS(on)Max}$	$I_D(A)$
20	$200m\Omega @ V_{GS}=4.5V$	1
	$250m\Omega @ V_{GS}=2.5V$	
	$310m\Omega @ V_{GS}=1.8V$	

DFN1006-3L PACKAGE

Marking :


DESCRIPTION

- The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness

MECHANICAL DATA

- Case : Molded plastic,DFN1006-3L
- Polarity : Shown above
- Terminals :Plated terminals, solderable per MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame retardant

Absolute maximum rating@25°C

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current	Continuous	I_D	± 1	A
	Pulsed	I_{DP}	± 4	
Total power dissipation		P_D	400	mW
Channel temperature		T_J	150	°C
Range of storage temperature		T_{STG}	-55 to +150	°C

**N-Channel Plastic-Encapsulate MOSFET****Thermal resistance**

Parameter	Symbol	Limits	Units
Channel to ambient	Rth(ch-a)	312.5	°C/W

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 1mA, V _{GS} = 0V	20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.4	-	0.9	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 0.65A	-	200	250	mΩ
		V _{GS} = 2.5V, I _D = 0.45A	-	250	300	mΩ
		V _{GS} = 1.8V, I _D = 0.25A	-	310	450	mΩ
		V _{GS} = 1.5V, I _D = 0.1A	-	260	-	mΩ
		V _{GS} = 1.2V, I _D = 0.1A	-	650	-	mΩ
Forward transfer admittance	g _{FS}	V _{DS} = 10V, I _D = 300mA	-	1.6	-	s
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz	-	48	-	pF
Output Capacitance	C _{OSS}		-	13	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	10	-	pF
Total Gate Charge	Q _G	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 0.01A	-	1.0	-	nC
Gate-Source Charge	Q _{GS}		-	0.1	-	nC
Gate-Drain Charge	Q _{GD}		-	0.42	-	nC
Turn-On Delay Time	t _{d(on)}	V _{DD} = 6V, V _{GS} = 4.5V, R _G = 50Ω, R _L = 12Ω I _D = 500mA	-	9	-	ns
Turn-Off Delay Time	t _{d(off)}		-	40	-	ns
Turn-On Rise Time	t _r		-	4	-	ns
Turn-On Fall Time	t _f		-	18	-	ns
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 100mA	-	0.7	1	V



N-Channel Plastic-Encapsulate MOSFET

Typical Characteristics

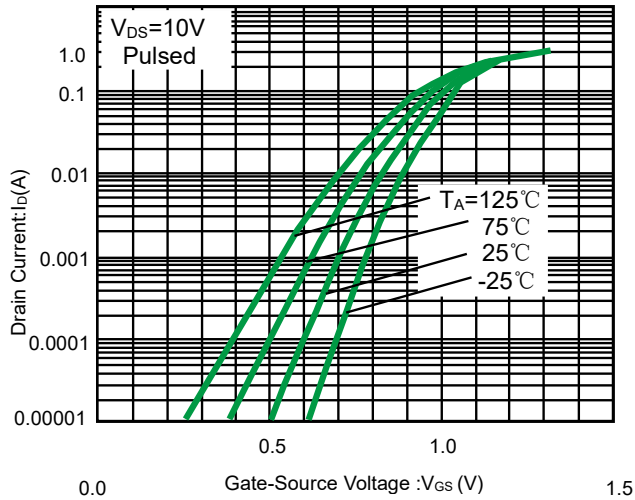


Fig 1. Typical transfer Characteristics

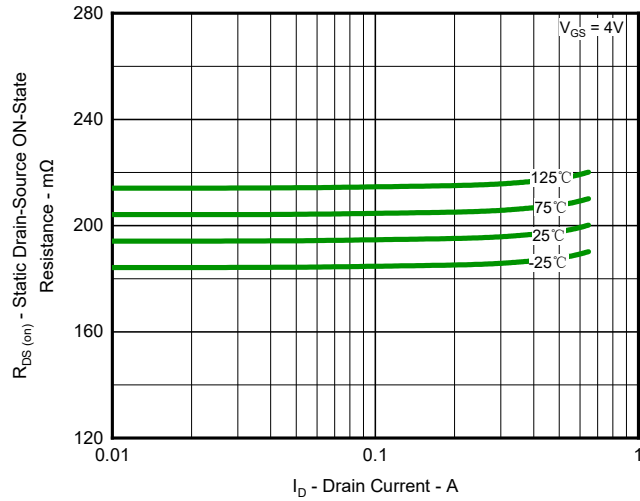


Fig 2. Static drain-source on-state resistance vs. drain current(I)

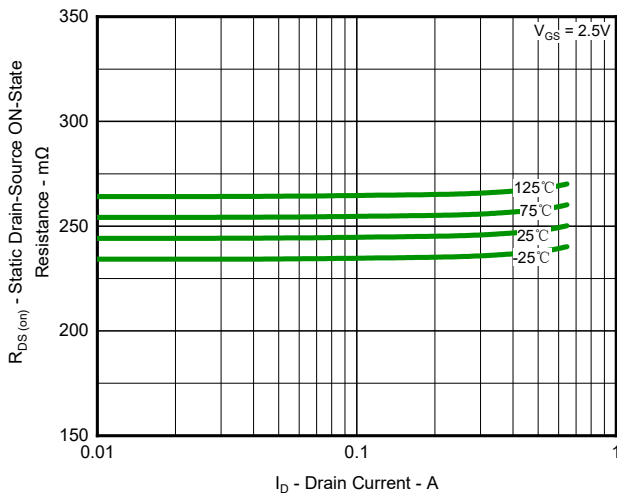


Fig 3. Static drain-source on-state resistance Vs. drain current (II)

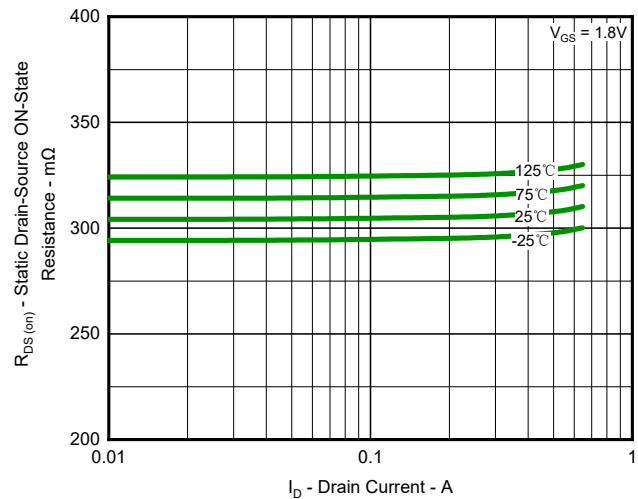


Fig 4. Static drain-source on-state resistance vs. drain current (III)

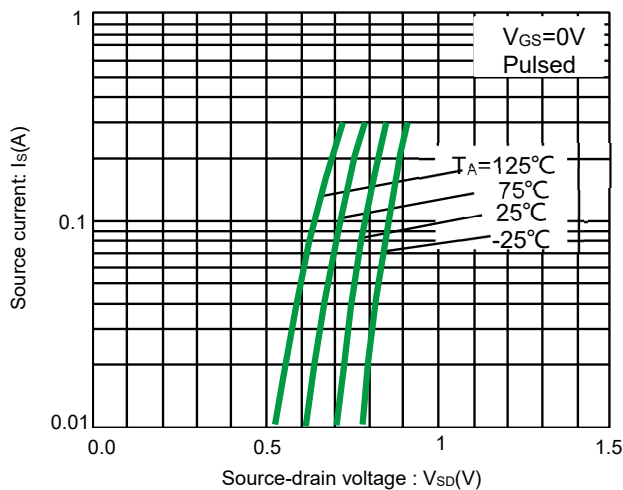


Fig 5. Source current vs. source-drain voltage

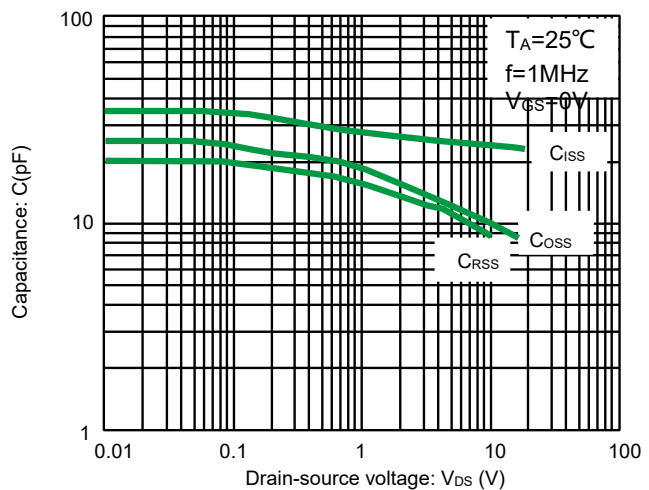


Fig 6. Typical capacitance vs. drain-source voltage

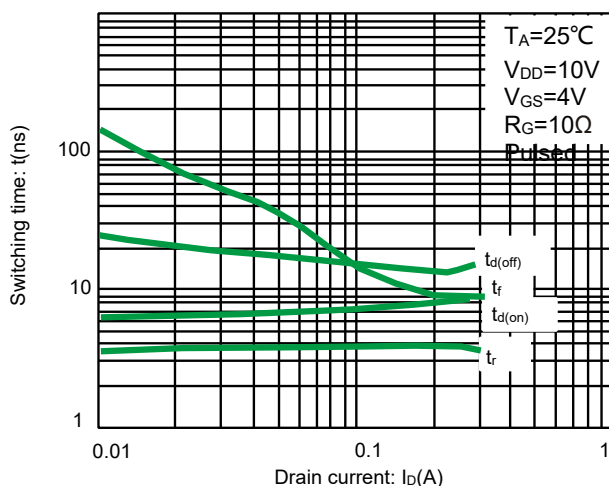
N-Channel Plastic-Encapsulate MOSFET


Fig 7. Switching characteristics

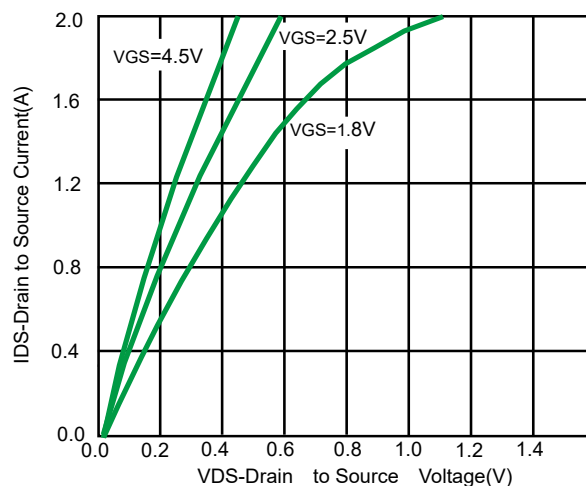


Fig 8. Output characteristics

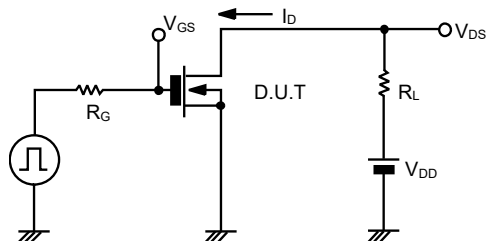
Switching characteristics measurement circuit


Fig.8 Switching time measurement circuit

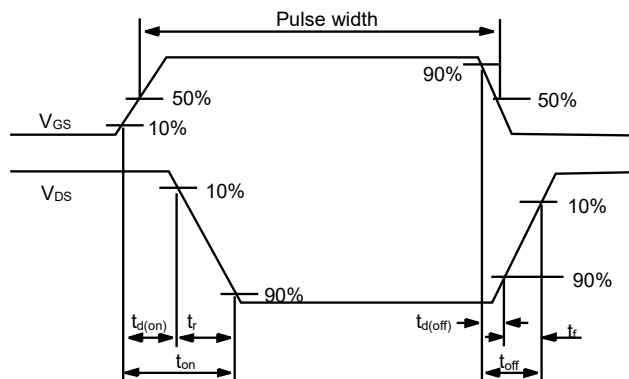
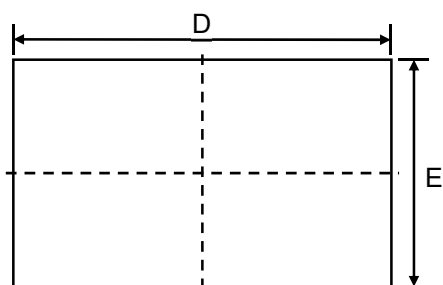


Fig.9 Switching time waveforms



Outline Drawing

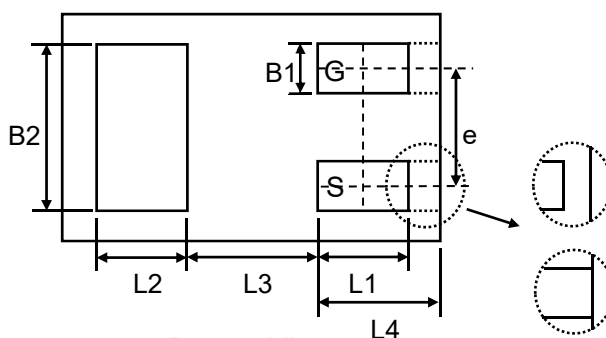
DFN1006-3L



Top View



Side View



Bottom View

Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.33	0.45	0.498	0.013	0.018	0.020
B	0.00	0.02	0.05	0.000	0.001	0.002
B1	0.10	0.15	0.20	0.004	0.006	0.008
B2	0.45	0.50	0.55	0.018	0.020	0.022
D	0.90	1.00	1.05	0.035	0.039	0.041
E	0.50	0.60	0.65	0.020	0.024	0.026
e	0.35			0.014		
L1	0.20	0.25	0.30	0.008	0.010	0.012
L2	0.20	0.25	0.30	0.008	0.010	0.012
L3	0.39			0.015		
L4	0.25	0.30	0.35	0.010	0.012	0.014

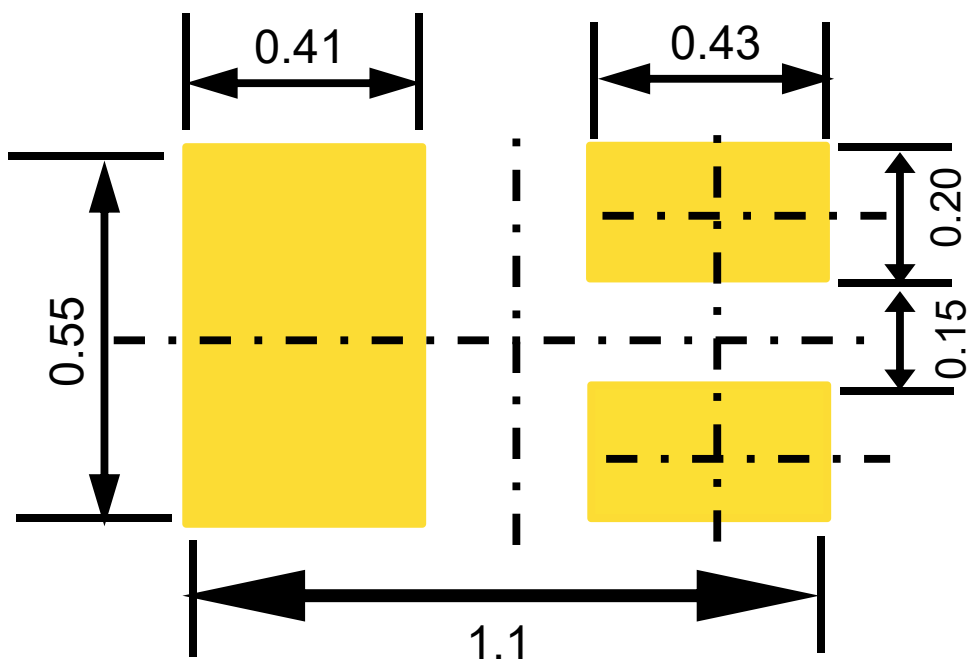
Unit: mm

Rev.C



Suggested Soldering Pad Layout

DFN1006-3L



Dimensions in inches and (millimeters)

RevD

Ordering Information:

Device PN	Marking ⁽⁴⁾	Packing
SE20N10ED-T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	EN	Tape&Reel: 10 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Packing code suffix "G" for RoHS product : Packing code Suffix "H" for halogen free product
All materials and products supplied comply with the U.S. Toxic Substances Control Act statement, PBT Chemicals

(3) Willas brand abbreviation, Label Type does not display

(4) There may be additional marking, which relates to the lot trace code information (data code and vendor code), the logo or the environmental category on the device

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