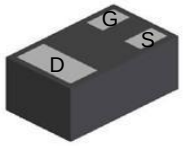
DFN1006-3L Plastic-Encapsulate MOSFETs

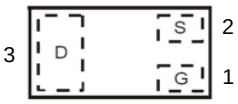
LJ3056PT10G P-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-20V	520mΩ@-4.5V	-0.69A
	780mΩ@-2.5V	
	950mΩ(TYP)@-1.8V	



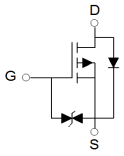
DFN1006-3L

Pin configuration (Top view)



Top View
Internal Schematic

1. GATE
2. SOURCE
3. DRAIN



FEATURE

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low R_{DS}(on)
- Operated at Low Logic Level Gate Drive
- Complementary to LJ2046N10G
- ESD Protected Gate

APPLICATION

- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Typical Gate-Source Voltage	±12	V
I_D	Continuous Drain Current (note 1)	-0.69	A
I_{DM}	Pulsed Drain Current (tp=10us)	-1.2	A
P_D	Power Dissipation (note 1)	100	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient (note 1)	1250	℃/W
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55~ 150	℃
T_L	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

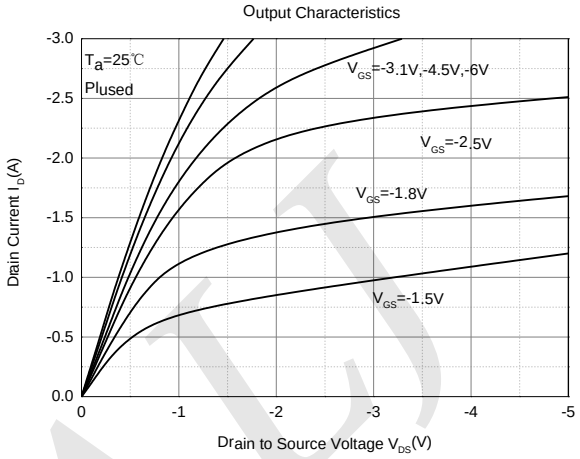
T_a=25℃ unless otherwise noted

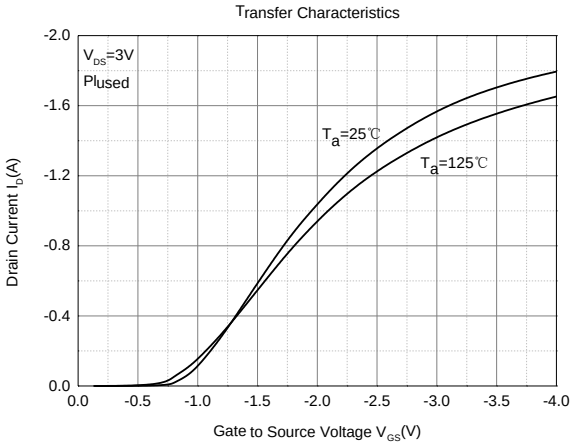
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS} = 0V, I_D =-250μA	-20			V
I_{DSS}	Zero gate voltage drain current	V_{DS} =-20V,V_{GS} = 0V			-1	μA
I_{GSS}	Gate-body leakage current	V_{GS} =±10V, V_{DS} = 0V			±20	uA
$V_{GS(th)}$	Gate threshold voltage (note 2)	V_{DS} =V_{GS}, I_D =-250μA	-0.35	-0.61	-1.1	V
$R_{DS(on)}$	Drain-source on-resistance(note 2)	V_{GS} =-4.5V, I_D =-1A		450	520	mΩ
		V_{GS} =-2.5V, I_D =-0.8A		650	780	mΩ
		V_{GS} =-1.8V, I_D =-0.5A		950		mΩ
g_{FS}	Forward tranconductance(note 2)	V_{DS} =-10V, I_D =-0.54A		1.2		S
V_{SD}	Diode forward voltage	I_S=-0.5A, V_{GS} = 0V			-1.2	V
DYNAMIC PARAMETERS(note 4)						
C_{iss}	Input Capacitance	V_{DS} =-16V,V_{GS} =0V,f =1MHz		113		pF
C_{oss}	Output Capacitance			15		pF
C_{rss}	Reverse Transfer Capacitance			9		pF
SWITCHING PARAMETERS (note 4)						
$t_{d(on)}$	Turn-on delay time (note 3)	V_{DD}=-4.5V,V_{GS}=-10V, I_D=-200mA,R_{GEN}=10Ω		9		ns
t_r	Turn-on rise time (note 3)			5.7		ns
$t_{d(off)}$	Turn-off delay time (note 3)			32.6		ns
t_f	Turn-off fall time (note 3)			20.3		ns

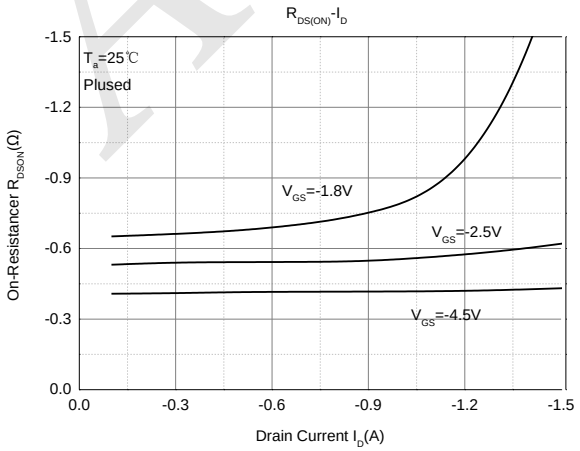
Notes:

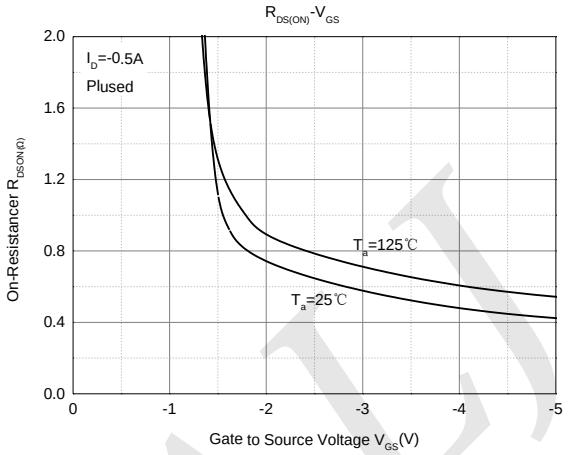
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producting.

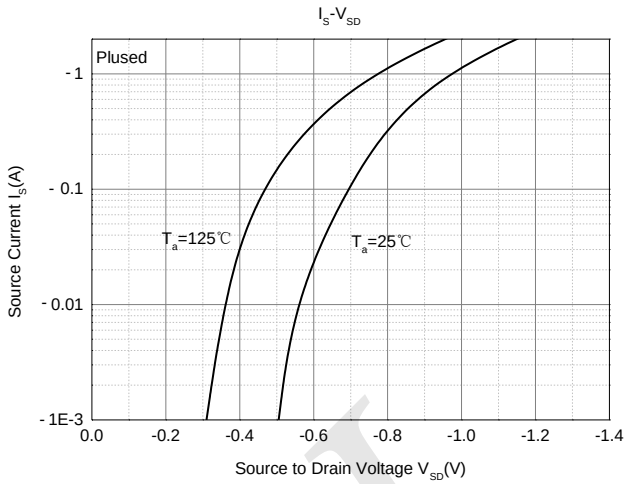
Typical Characteristics

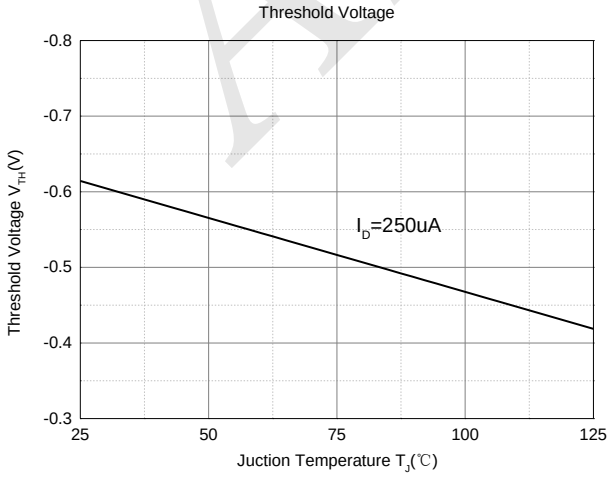




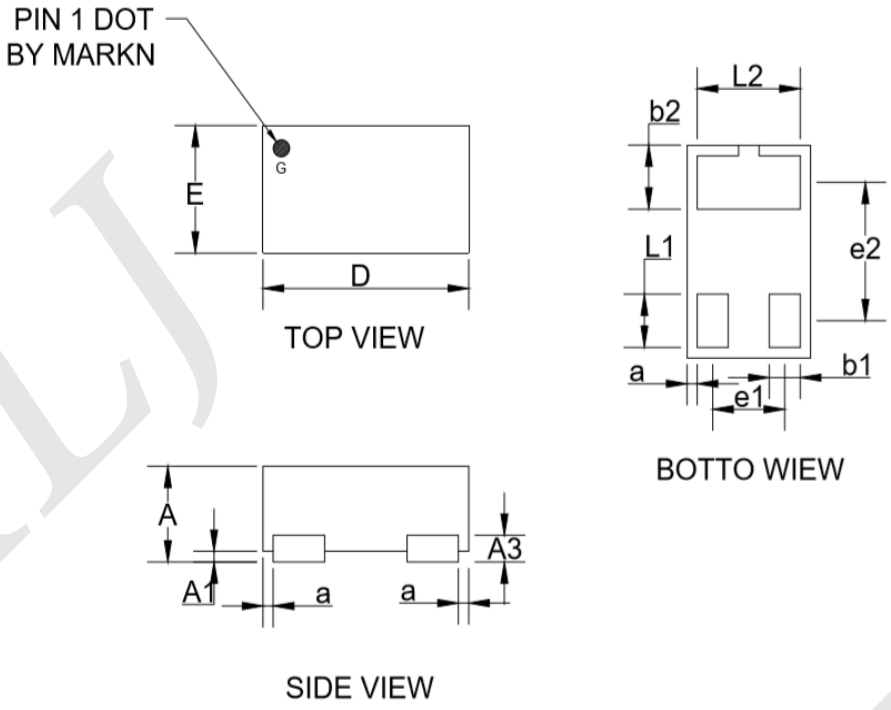






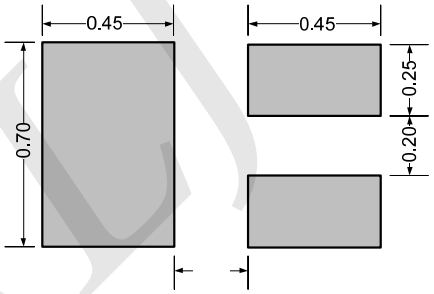


DFN1006-3L Package Outline Dimensions



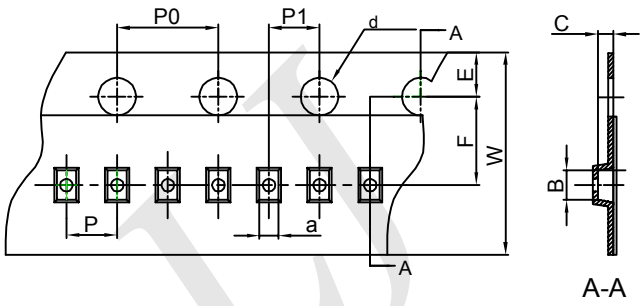
COMMON DIMENSIONS(MM)			
PKG.	X1: EXTREME THIN		
REF.	MIN.	NOM.	MAX
A	>0.40	—	0.50
A1	0.00	—	0.05
A3	0.125 REF.		
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b1	0.10	0.15	0.20
b2	0.20	0.25	0.30
L1	0.20	0.25	0.30
L2	0.40	0.50	0.60
a	—	—	0.05
e1	0.35 BSC		
e2	0.65 BSC		

Recommend land pattern (Unit: mm)



Note: This land pattern is for your reference only. Actual pad layouts may vary depending on application.

WBFBP-03E(1.0×0.6×0.5) Embossed Carrier Tape

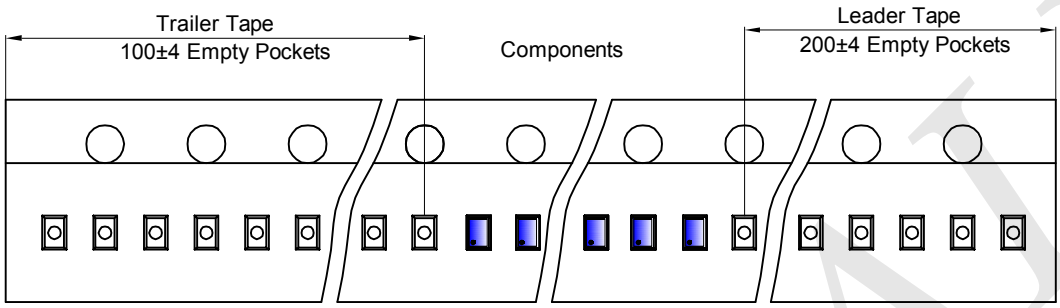


Packaging Description:

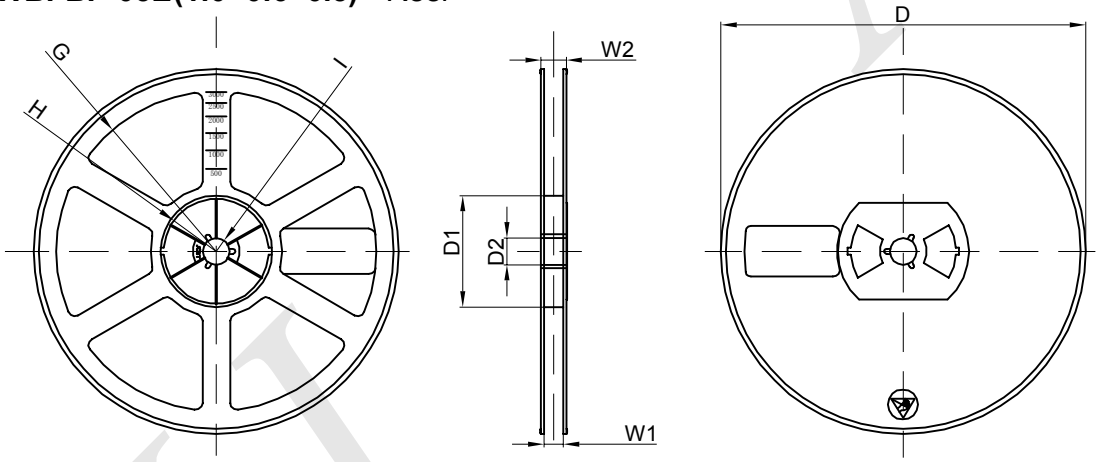
WBFBP-03E(1.0×0.6×0.5) parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 10,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
WBFBP-03E(1.0×0.6×0.5)	0.66	1.15	0.66	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

WBFBP-03E(1.0×0.6×0.5) Tape Leader and Trailer



WBFBP-03E(1.0×0.6×0.5) Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	150,000 pcs	203×203×195	600,000 pcs	438×438×220	

IR—Reflow Profile