

Features

	$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
Q_1	25V	270mΩ@4.5V	0.8 A
		320mΩ@2.5V	
		800mΩ@1.8V	
Q_2	-25V	520mΩ@-4.5V	-0.8 A
		700mΩ@-2.5V	
		950mΩ(TYP)@-1.8V	

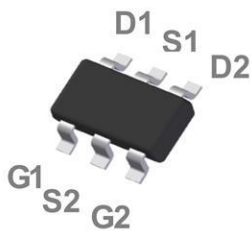
- ESD Protected

Application

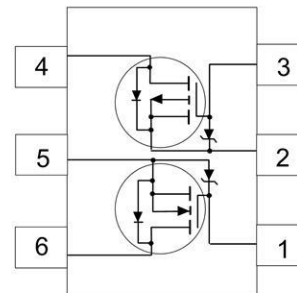
- Notebook
- Load Switch
- Networking
- Hand-held Instruments

Package and Pin Configuration

SOT23-6



Circuit diagram



Marking: 321P

Absolute Maximum Ratings $T_c=25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Unit
N-MOSFET			
Drain-Source Voltage	V_{DS}	25	V
Typical Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current (note 1)	I_D	0.8	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	1.3	A
P-MOSFET			
Drain-Source Voltage	V_{DS}	-25	V
Typical Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current (note 1)	I_D	-0.8	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	-1.3	A
Temperature and Thermal Resistance			
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	650	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^\circ\text{C}$

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Q₁
N-ch MOSFET ELECTRICAL CHARACTERISTICS

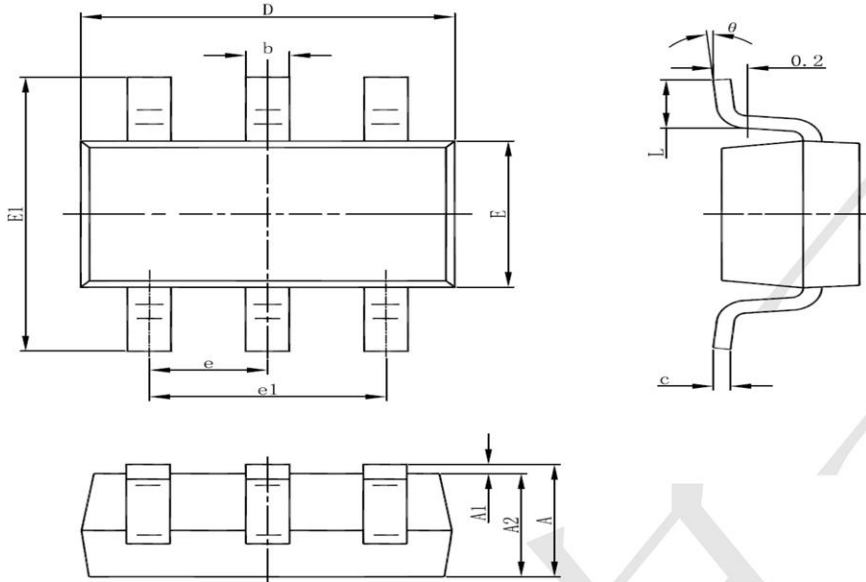
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	25			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.45	0.7	1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} = 4.5V, I _D = 0.65A			270	mΩ
		V _{GS} = 2.5V, I _D = 0.55A			320	mΩ
		V _{GS} = 1.8V, I _D = 0.45A			800	mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} = 10V, I _D = 0.8A		1.6		S
Diode forward voltage	V _{SD}	I _S = 0.15A, V _{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} = 16V, V _{GS} = 0V, f = 1MHz			120	pF
Output Capacitance	C _{oss}				20	pF
Reverse Transfer Capacitance	C _{rss}				15	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 500mA, R _{GEN} = 10Ω		6.7		ns
Turn-on rise time	t _r			4.8		ns
Turn-off delay time	t _{d(off)}			17.3		ns
Turn-off fall time	t _f			7.4		ns

Q₂
P-ch MOSFET ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-25			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.45	-0.7	-1.3	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1A		270	520	mΩ
		V _{GS} = -2.5V, I _D = -0.8A		330	700	mΩ
		V _{GS} = -1.8V, I _D = -0.5A		950		mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} = -10V, I _D = -0.54A		1.2		S
Diode forward voltage	V _{SD}	I _S = -0.5A, V _{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iss}	V _{DS} = -16V, V _{GS} = 0V, f = 1MHz			170	pF
Output Capacitance	C _{oss}				25	pF
Reverse Transfer Capacitance	C _{rss}				15	pF
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	t _{d(on)}	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -200mA, R _{GEN} = 10Ω		9		ns
Turn-on rise time	t _r			5.8		ns
Turn-off delay time	t _{d(off)}			32.7		ns
Turn-off fall time	t _f			20.3		ns



SOT23-6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°