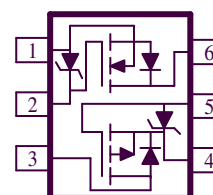
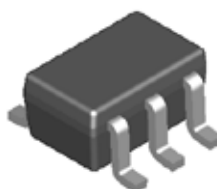


These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe SC70-6 saves board space
- Fast switching speed
- High performance trench technology

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	90 @ $V_{GS} = 4.5V$	1.5
	120 @ $V_{GS} = 2.5V$	1.3
-20	200 @ $V_{GS} = -4.5V$	-1.0
	370 @ $V_{GS} = -2.5V$	-0.5



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter	Symbol	N-Channel	P-Channel	Units
Drain-Source Voltage	V_{DS}	20	-20	V
Gate-Source Voltage	V_{GS}	8	-8	
Continuous Drain Current ^a	I_D	$T_A=25^\circ C$	1.5	A
		$T_A=70^\circ C$	1.3	
Pulsed Drain Current ^b	I_{DM}	0.7	-1.2	
Continuous Source Current (Diode Conduction) ^a	I_S	0.25	-0.25	A
Power Dissipation ^a	P_D	$T_A=25^\circ C$	0.3	W
		$T_A=70^\circ C$	0.21	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	R_{THJA}	$t \leq 5$ sec	415
		Steady-State	460

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Conditions	Limits				Unit
			Ch	Min	Typ	Max	
Static							
Gate-Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250 uA	N	0.3			V
		V _{GS} = V _{DS} , I _D = -250 uA	P	-0.3			
Gate-Body Leakage	I _{GSS}	V _{DS} = -20 V, V _{GS} = 0 V	P			-10	μA
		V _{GS} = -20 V, V _{DS} = 0 V, T _J = 55°C				-10	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V	N			1	μA
		V _{GS} = -20 V, V _{DS} = 0 V, T _J = 55°C				10	
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	N	0.5			A
		V _{DS} = -5 V, V _{GS} = -4.5 V	P	0.4			
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 0.22 A	N			0.09	Ω
		V _{GS} = 2.5 V, I _D = 0.19 A				0.12	
		V _{GS} = -4.5 V, I _D = -0.2 A	P			0.2	
		V _{GS} = -2.5 V, I _D = -0.2 A				0.4	
Forward Transconductance ^A	g _{fs}	V _{DS} = 5 V, I _D = 0.2 A	N		1.45		S
		V _{DS} = -5 V, I _D = 0.2 A	P		0.9		
Dynamic							
Total Gate Charge	Q _g	N-Channel V _{DS} =5V, V _{GS} =4.5V, I _D =0.2A	N		1.64		nC
Gate-Source Charge	Q _{gs}		P		1.1		
		Gate-Drain Charge	Q _{gd}	N		0.4	
P				0.31			
Gate-Drain Charge	Q _{gd}	P-Channel V _{DS} =-5V, V _{GS} =-4.5V, I _D =-0.41A	N		0.45		
			P		0.26		
Switching							
Turn-On Delay Time	t _{d(on)}	N-Chaneel V _{DD} =5V, V _{GS} =4.5V, I _D =0.5A , R _{GEN} =50Ω,	N		3		nS
			P		7		
Rise Time	t _r	P-Channel V _{DD} =-5V, V _{GS} =-4.5V, I _D =-0.41A R _{GEN} =50Ω	N		8.5		
			P		8		
Turn-Off Delay Time	t _{d(off)}		N		17		
			P		55		
Fall-Time	t _f		N		13		
			P		35		

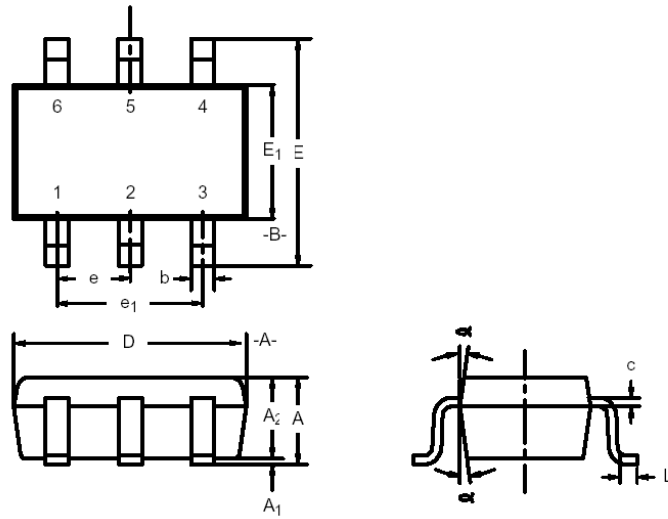
Notes

- a. Pulse test: PW <= 300us duty cycle <= 2%.
- b. Guaranteed by design, not subject to production testing.

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Package Information

SC-70: 6LEAD



Dim	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.90	–	1.10	0.035	–	0.043
A ₁	–	–	0.10	–	–	0.004
A ₂	0.80	–	1.00	0.031	–	0.039
b	0.15	–	0.30	0.006	–	0.012
c	0.10	–	0.25	0.004	–	0.010
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.80	2.10	2.40	0.071	0.083	0.094
E ₁	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65BSC			0.026BSC		
e ₁	1.20	1.30	1.40	0.047	0.051	0.055
L	0.10	0.20	0.30	0.004	0.008	0.012
α	7°Nom			7°Nom		