SuperMOS – SOT-23 -40V BV_{DSS}, 65mΩ $R_{DS(on)}$, P-channel MOSFET

1. Description

The PJA3441 R1 00001 is P-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. Device is suitable for use in DC-DC conversion, power switch and charging circuit. Standard Product PJA3441 R1 00001 is Pb-free.

2. Features

- -40V, $R_{DS(ON)}$=65mΩ(TYP.) @V_{GS}=-10V
  $R_{DS(ON)}$=88mΩ(TYP.) @V_{GS}=-4.5V
- Fast Switching
- High density cell design for low $R_{DS(on)}$
- Material: Halogen free
- Reliable and rugged
- Avalanche Rated
- Low leakage current

3. Applications

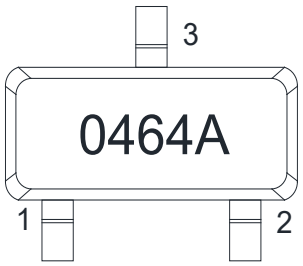
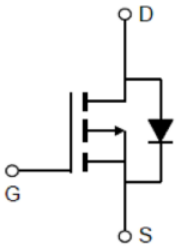
- PWM applications
- Load switch
- Power management in portable/desktop PCs
- DC/DC conversion

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
PJA3441 R1 00001	SOT-23	0464A	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

5. Pin Configuration and Functions

Pin	Function	Outline	Circuit Diagram
1	Gate		
2	Source		

3	Drain		

6. Specification

Absolute Maximum Rating & Thermal Characteristics

Ratings at 25 ˚C ambient temperature unless otherwise specified.

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		BV_{DSS}	-40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	-3.0	A
Continuous Drain Current	T_A=100°C		-1.9	A
Maximum Power Dissipation		P_D	1.3	W
Pulsed Drain Current		I_{DM}	-12.0	A
Operating Junction Temperature		T_J	-55 to +150	°C
Storage Temperature Range		T_{stg}	-55 to +150	°C

Thermal resistance ratings

Single Operation				
Parameter	Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance (t ≤ 10s)	$R_{\theta JA}$		95	°C/W

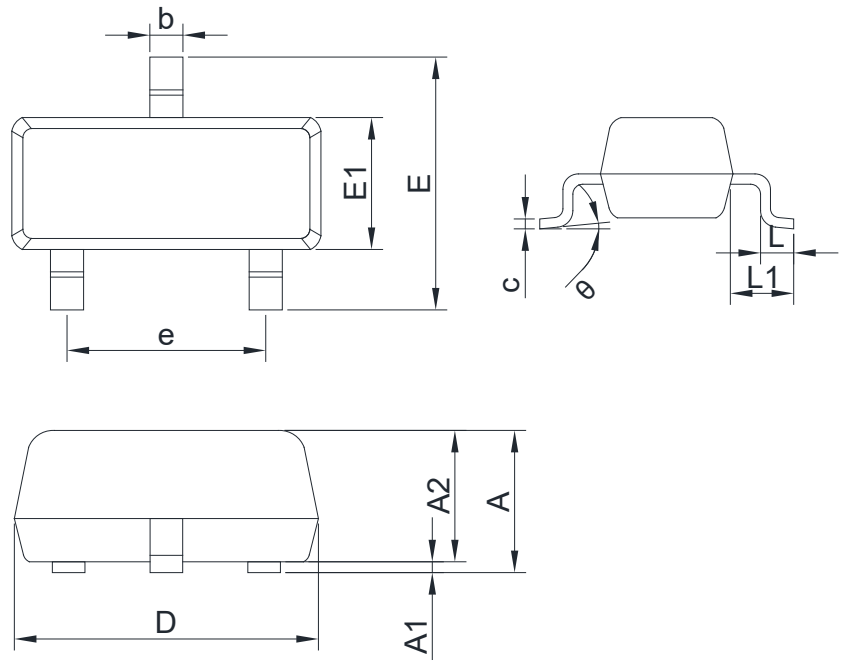
Electrical Characteristics

At TA = 25℃ unless otherwise specified

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=-250uA	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V, V_{GS}=0V			-1	uA
Gate-to-source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS}, I_D=-250uA	-1.1	-1.6	-2.2	V
Drain-to-source On-resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-1.2A		65	85	mΩ
		V_{GS}=-4.5V, I_D=-1A		88	111	
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-20V f=1MHz		316		pF
Output Capacitance	C_{OSS}			37		
Reverse Transfer Capacitance	C_{RSS}			31		
Total Gate Charge	Q_G	V_{GS}=0 to -10V, V_{DS}=-20V, I_D =-1.2A		8		nC
Gate-to-Source Charge	Q_{GS}			1.5		
Gate-to-Drain Charge	Q_{GD}			1.7		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{d(ON)}$	V_{GS}=-10V, V_{DD}=-20V I_D=-1.2A, R_G=6Ω		6		ns
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(OFF)}$			26		
Fall Time	t_f			15		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-1.5A			-1.2	V

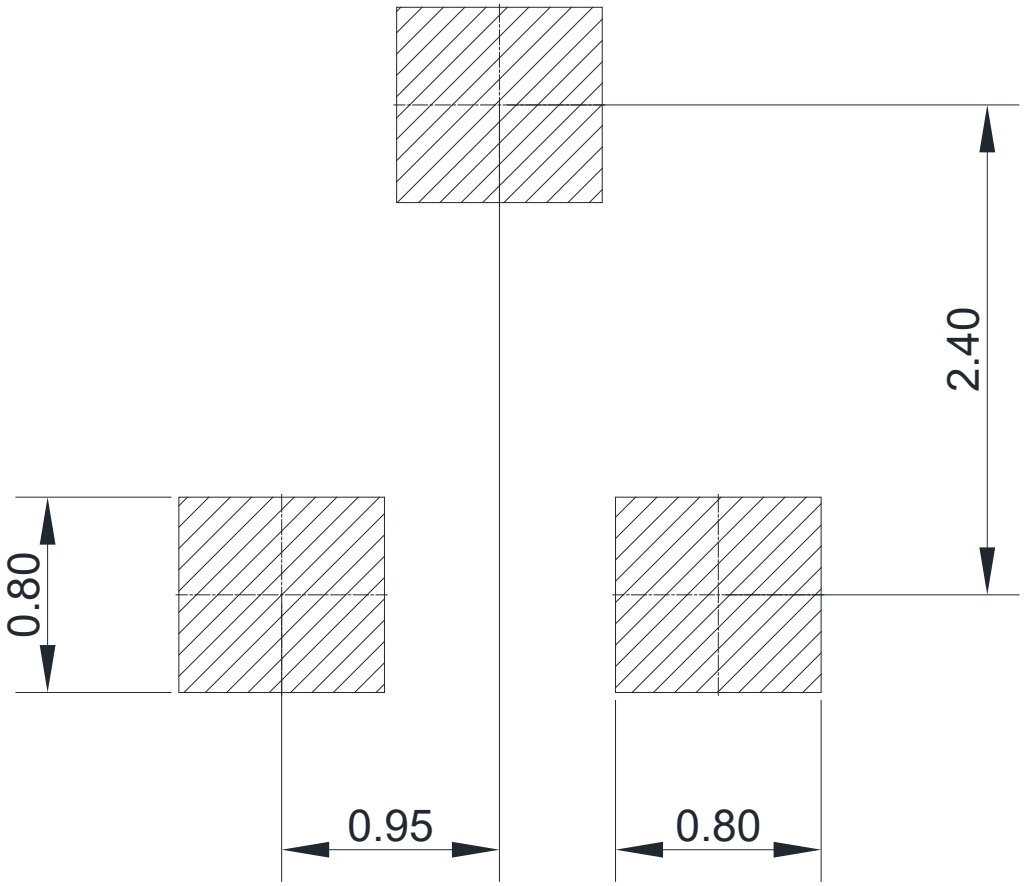
7. Dimension (SOT-23)

POD(Z)



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	0.90	1.20	E	2.25	2.55
A1	0.00	0.10	E1	1.20	1.40
A2	0.90	1.10	e	1.80	2.00
b	0.30	0.50	L	0.30	0.50
c	0.07	0.18	L1	0.475	0.625
D	2.80	3.04	θ	0°	8°

8. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

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