

TAP3407

P-Channel Power MOSFET

Descriptions

P-CHANNEL MOSFET in a SOT23-3 Plastic Package.

Features

V_{DS} (V) = -30V

I_D = -4.1 A

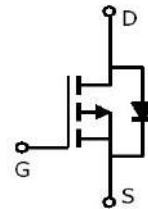
$R_{DS(ON)}$ < 60m Ω (V_{GS} = -10V)

$R_{DS(ON)}$ < 87m Ω (V_{GS} = -4.5V)

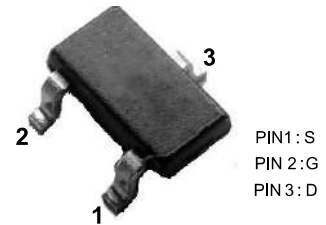
Applications

This device is suitable for use as a load switch or in PWM applications.

Equivalent Circuit



Pinning



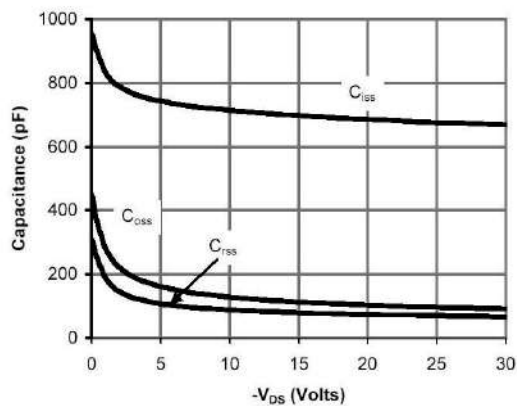
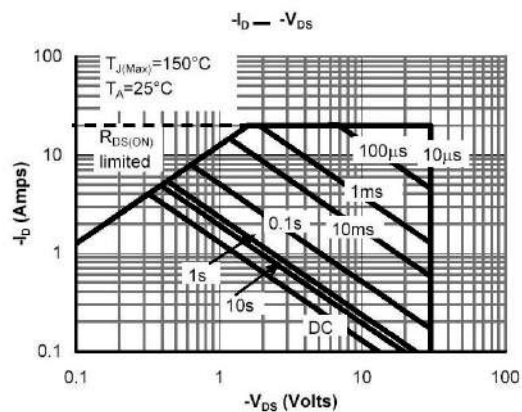
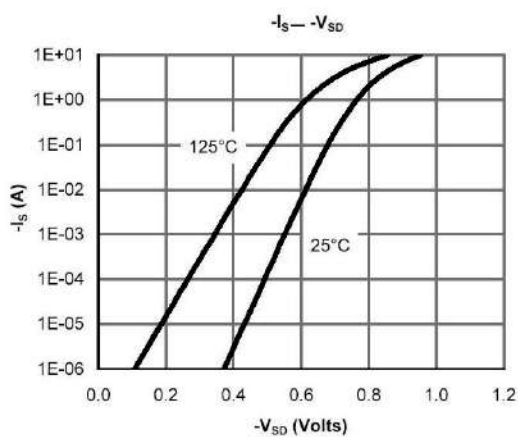
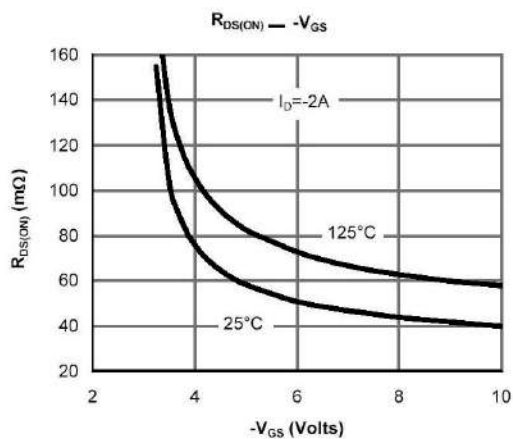
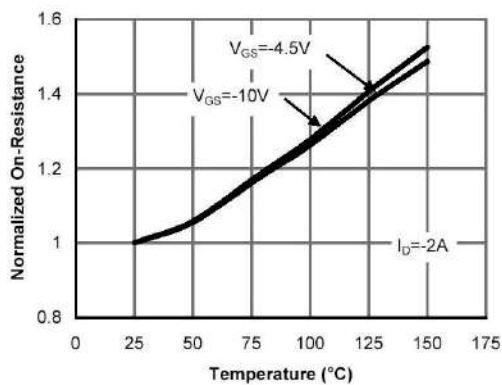
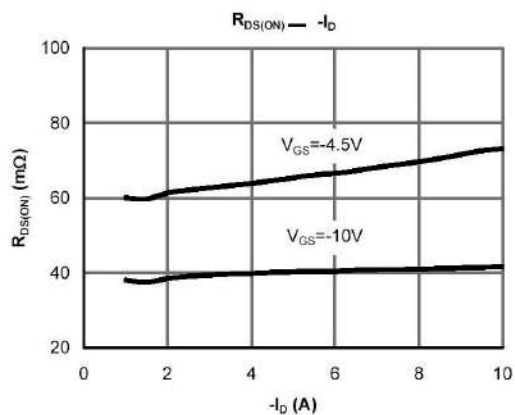
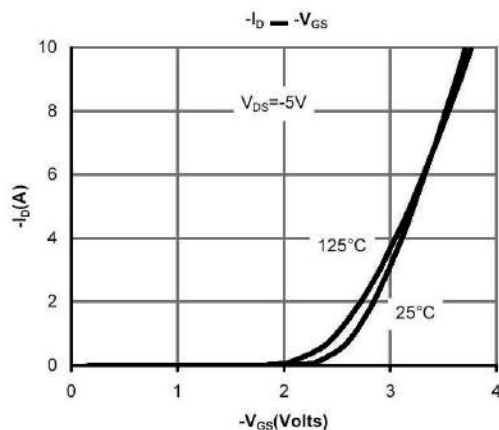
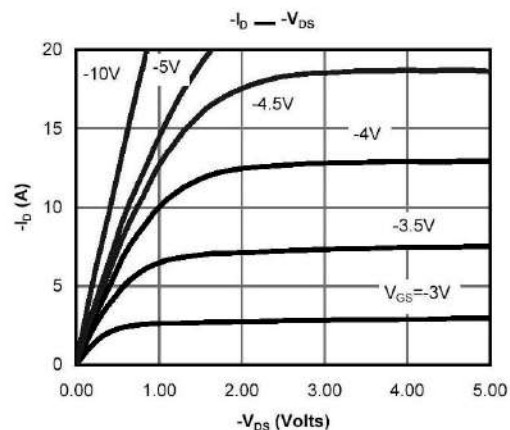
Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Drain Current – Continuous	I_D	-4.1	A
Drain Current- Continuous	$I_D(T_a=70^\circ\text{C})$	-3.5	A
Pulsed Drain Current	I_{DM}	-20	A
Gate-Source Voltage	V_{GS}	± 20	V
Total Power Dissipation	P_D	1.4	W
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	1.0	W
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

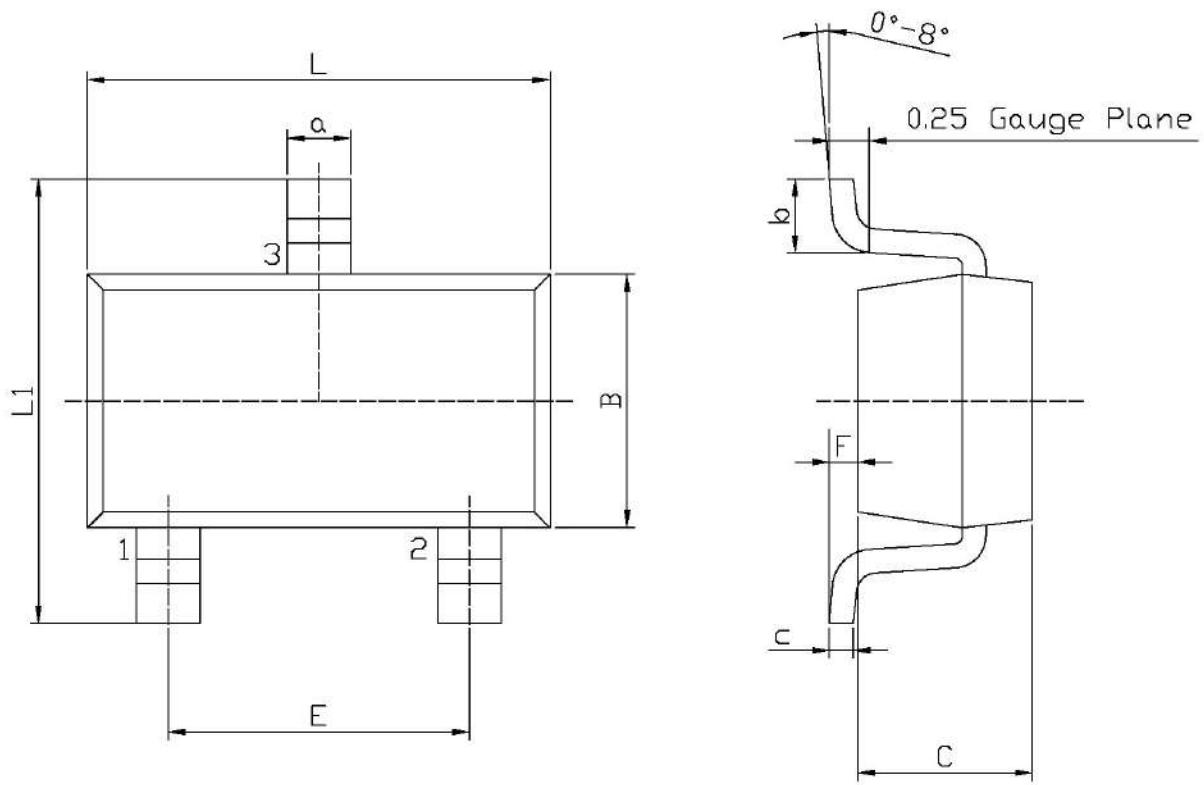
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=-250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V$ $V_{GS}=0V$			-1	μA
		$V_{DS}=-24V$ $V_{GS}=0V$ $T_J=55^\circ C$			-5	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
On–State Drain Current	$I_{D(on)}$	$V_{GS}=-4.5V$ $V_{DS}=-5V$	-10			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.4	-3	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=-10V$ $I_D=-4.1A$		54	60	m Ω
	$R_{DS(on)2}$	$V_{GS}=-10V$ $I_D=-4.1A$ $T_J=125^\circ C$		57	73	
	$R_{DS(on)3}$	$V_{GS}=-4.5V$ $I_D=-3A$		80	95	
Forward Transconductance	g_{FS}	$V_{DS}=-5V$ $I_D=-4A$	5.5	8.2		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=-1A$		-0.77	-1	V
Input Capacitance	C_{iss}	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$		700		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			75		
Turn–On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $R_L=3.6\Omega$ $V_{DS}=-15V$ $R_{GEN}=3\Omega$		8.6		ns
Turn–On Rise Time	t_r			5		
Turn–Off Delay Time	$t_{d(off)}$			28.2		
Turn–Off Fall Time	t_f			13.5		

Electrical Characteristic Curve



Package Dimensions

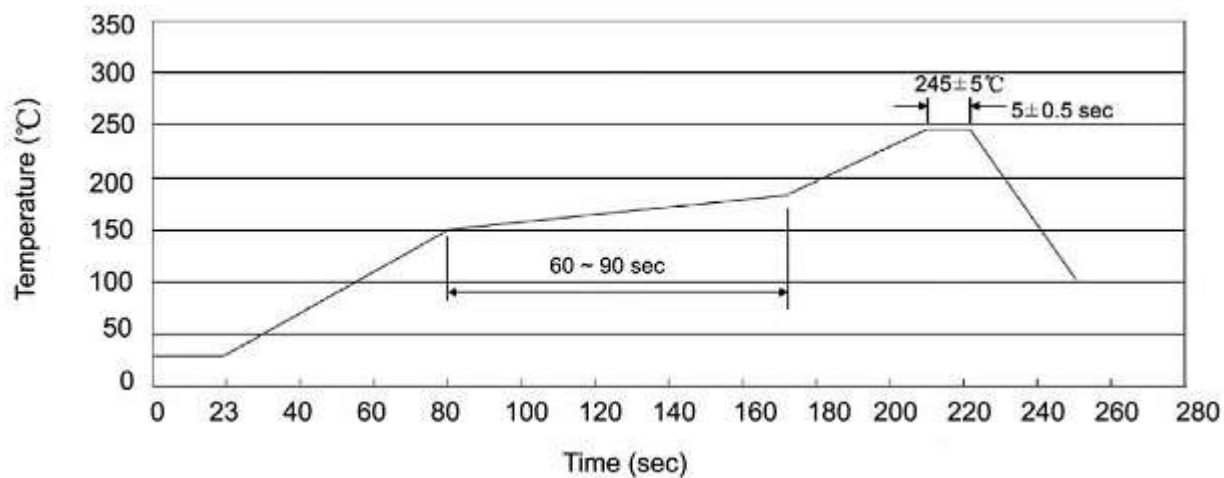


Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1. Preheating: 25~150°C, Time: 60~90sec.
2. Peak Temp.: 245±5°C, Duration: 5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

Resistance to Soldering Heat Test Conditions

Temp.: 260±5°C Time: 10±1 sec

Packaging SPEC.

REEL

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23-3	3,000	10	30,000	4	120,000	7"×8	210×205×205	445×230×435