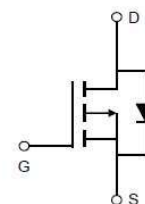
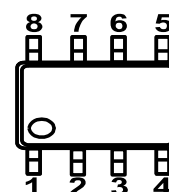


Feature

- -30V,-5.3A
 $R_{DS(on)} < 58m\Omega @ V_{GS} = -10V$ $T_{YP} = 50m\Omega$
 $R_{DS(on)} < 80m\Omega @ V_{GS} = -4.5V$ $T_{YP} = 65m\Omega$
- Low $R_{DS(on)}$,
- Low gate charge
- Fast switching speed
- High performance trench technology for extremely
- High power



Schematic Diagram



SOP-8

Application

- Low switch
- Power management
- Battery protection

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
M9435	APM9435	SOP-8	13inch	-	4000

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_a = 25^\circ\text{C}$)		I_D	-5.3	A
Pulsed Drain Current		I_{DM}	-50	A
Power Dissipation	Note1a	P_D	2.5	W
	Note1b		1.2	
	Note1c		1.0	
Thermal Resistance from Junction to Ambient Note1a		$R_{\theta JA}$	50	$^\circ\text{C/W}$
Thermal Resistance from Junction to Ambient Note1c		$R_{\theta JA}$	125	$^\circ\text{C/W}$
Thermal Resistance from Junction to case Note1		$R_{\theta JC}$	25	$^\circ\text{C/W}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

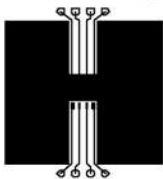
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-30	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-24V, V _{GS} = 0V	-	-	-1.0	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V,V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-1.0	-1.7	-3.0	V
On-State Drain Current	I _{D(ON)}	V _{GS} =-10V,V _{DS} = -5V	-25			A
Forward Transconductance	G _{fs}	V _{DS} =-5V, I _D =-5.3A	-	10		S
Drain-source on-resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-5.3A T _a =25℃	-	50	58	mΩ
		V _{GS} =-10V, I _D =-5.3A T _a =125℃		57	77	
		V _{GS} =-4.5V, I _D =-4A	-	65	80	
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =-15V, I _D =-1A, V _{GS} =-10V	-	7.0	14	ns
Turn-on rise time	t _r		-	13	24	
Turn-off delay time	t _{d(off)}		-	14	25	
Turn-off fall time	t _f		-	9.0	17	
Total Gate Charge	Qg	V _{DS} =-15V, I _D =-4A, V _{GS} =-10V	-	10	14	nC
Gate-Source Charge	Qgs		-	2.2	-	
Gate-Drain Charge	Qgd		-	2.0	-	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f =1.0MHz	-	528	-	pF
Output Capacitance	C _{oss}		-	132	-	
Reverse Transfer Capacitance	C _{rss}		-	70	-	
Source-Drain Diode characteristics						
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =-2.1A	-	-0.8	-1.2	V
Diode Forward current	I _S		-	-	-2.1	A

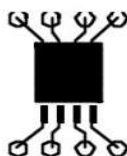
Notes:

1. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. $R_{\theta JC}$ is guaranteed by design while $R_{\theta CA}$ is determined by the user's board design.

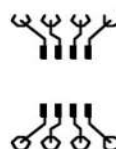
a) 50°C/W when mounted on a 1.0 in^2 pad of 2 oz. copper.



b) 105°C/W when mounted on a 0.04 in^2 pad of 2 oz. copper.



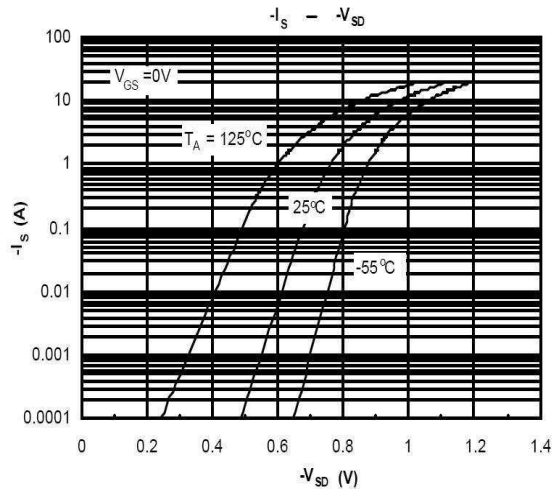
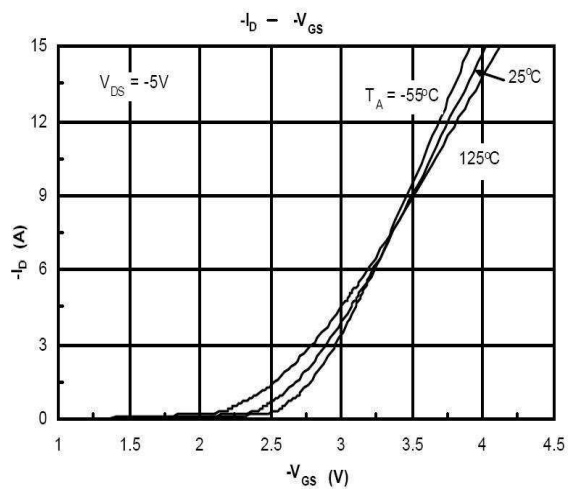
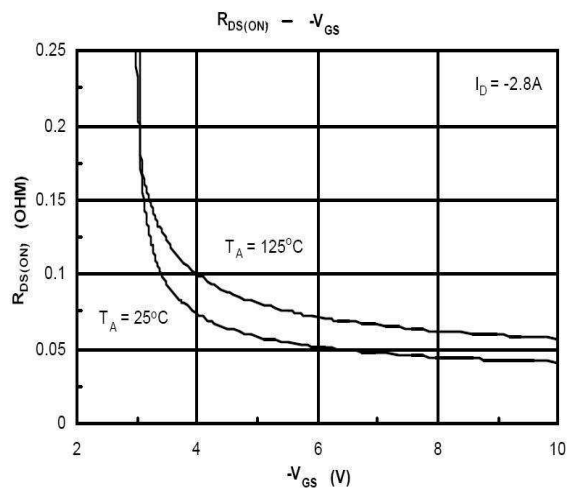
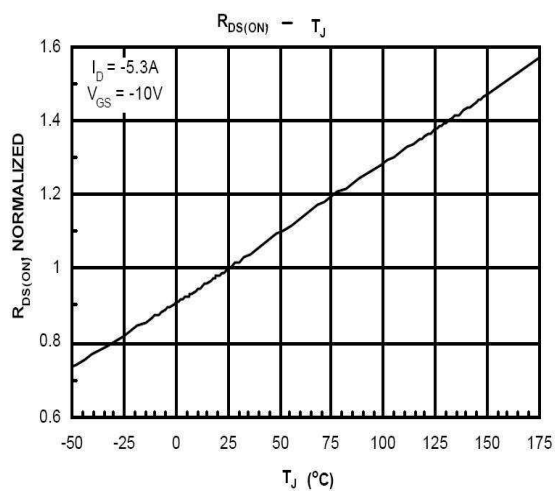
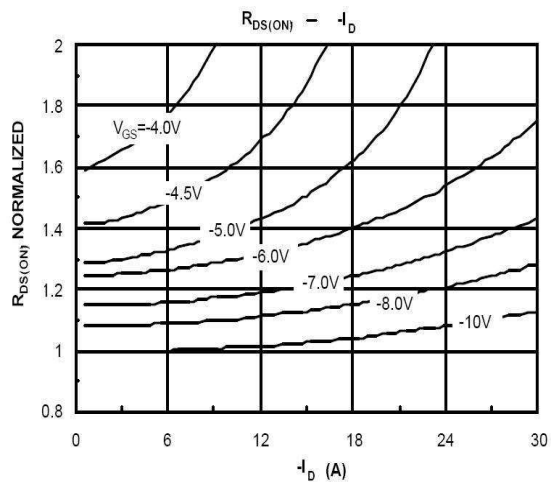
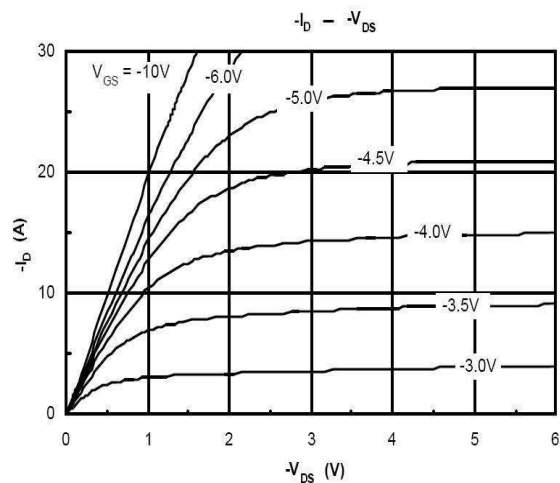
c) 125°C/W when mounted on a minimum pad.



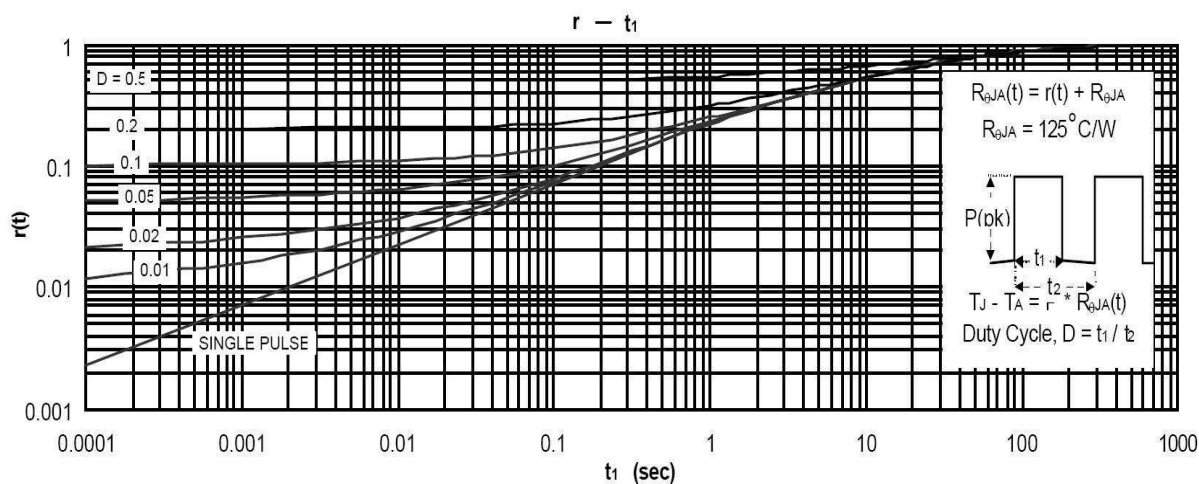
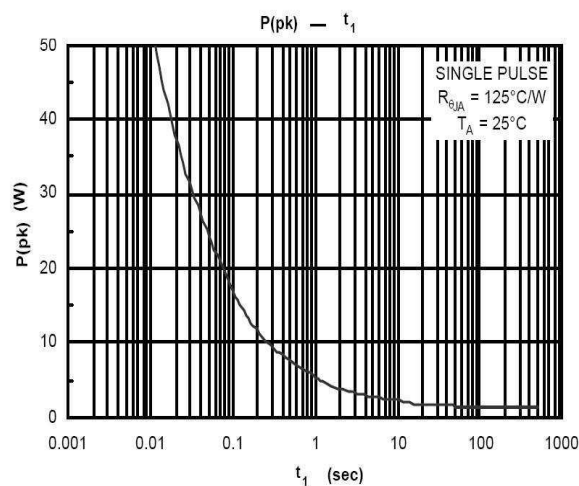
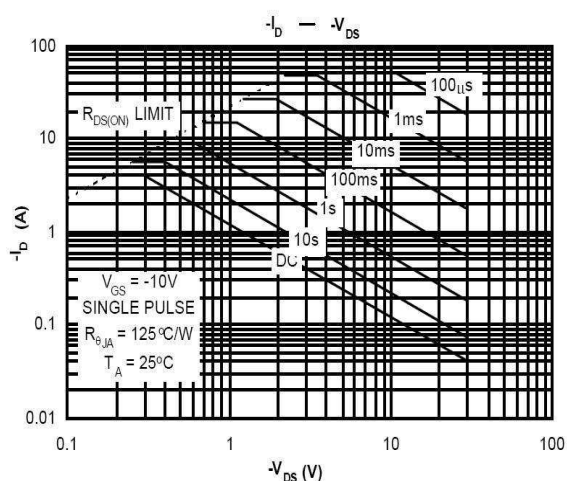
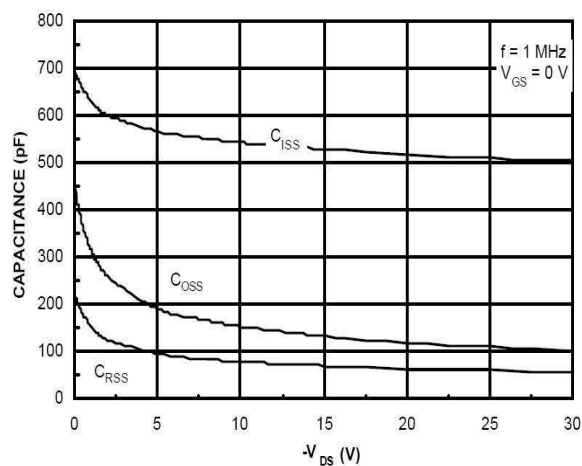
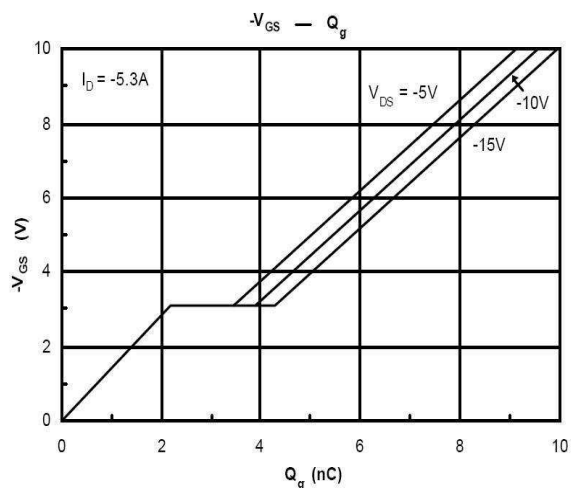
Scale 1 : 1 on letter size paper

2. Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$

Typical Performance Characteristics



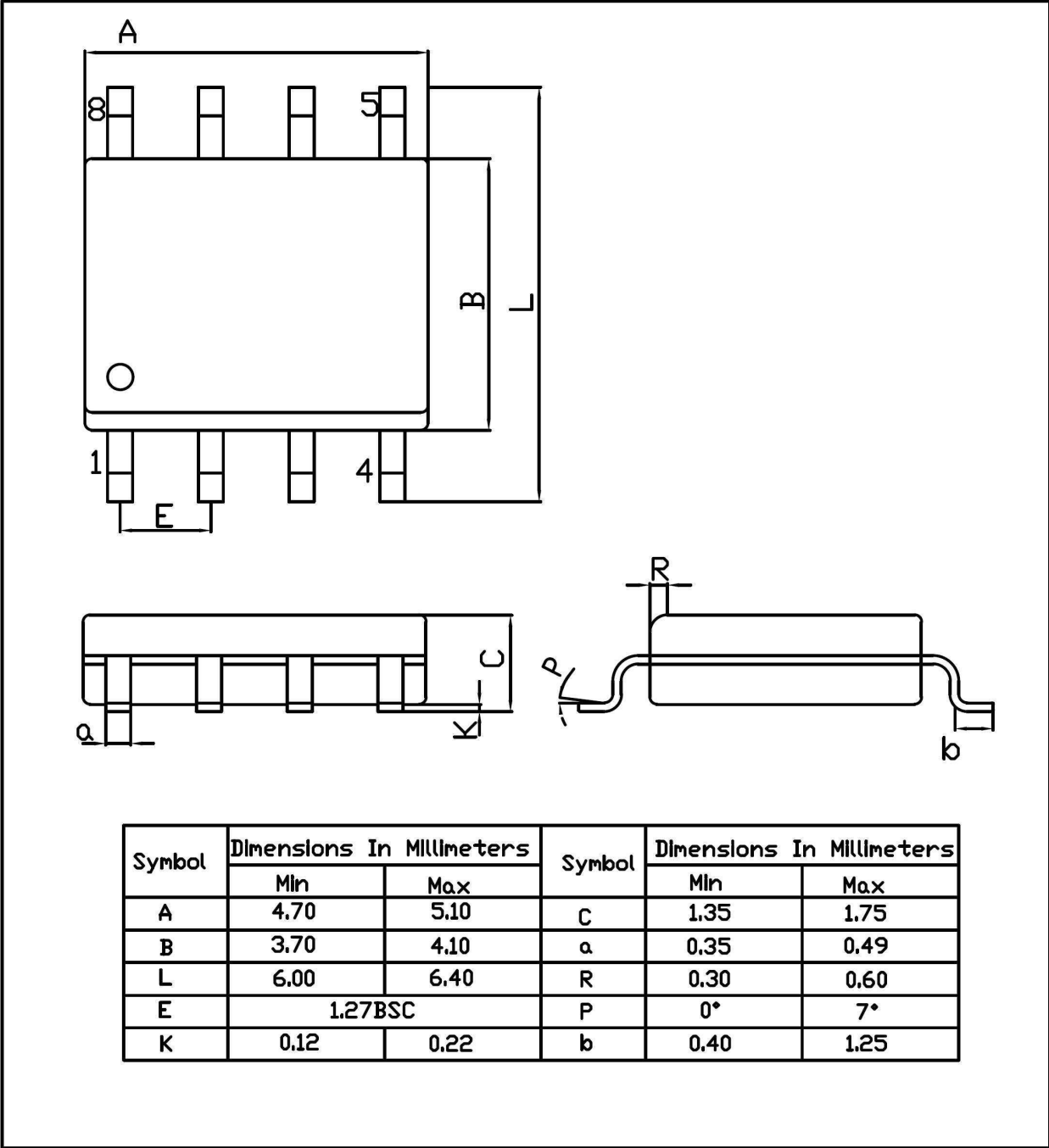
Typical Performance Characteristics



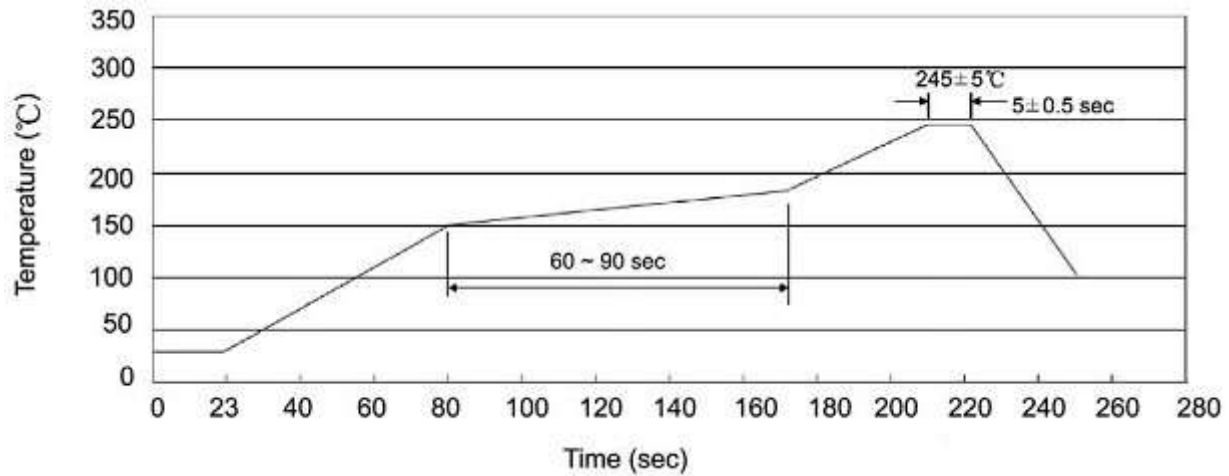
Package Dimensions

SOP-8

Unit:mm



回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

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.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C 时间：10±1 sec.

Temp.:260±5°C Time:10±1 sec