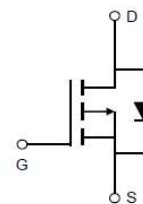
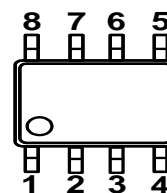


Feature

- -30V,-5.3A
 $R_{DS(on)} < 58m\Omega @ V_{GS} = -10V \quad T_{YP} = 50m\Omega$
 $R_{DS(on)} < 80m\Omega @ V_{GS} = -4.5V \quad T_{YP} = 65m\Omega$
- Low RDS(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°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°C)	I _D	-5.3	A
Pulsed Drain Current	I _{DM}	-50	A
Power Dissipation	Note1a	2.5	W
	Note1b	1.2	
	Note1c	1.0	
Thermal Resistance from Junction to Ambient Note1a	R _{θJA}	50	°C/W
Thermal Resistance from Junction to Ambient Note1c	R _{θJA}	125	°C/W
Thermal Resistance from Junction to case Note1	R _{θJC}	25	°C/W
Storage Temperature	T _{STG}	-55~ +150	°C

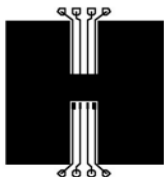
MOSFET ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$	-	-	-1.0	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-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	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5.3A, T_a = 25^\circ\text{C}$	-	50	58	m Ω
		$V_{GS} = -10V, I_D = -5.3A, T_a = 125^\circ\text{C}$		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	Q_g	$V_{DS} = -15V, I_D = -4A, V_{GS} = -10V$	-	10	14	nC
Gate-Source Charge	Q_{gs}		-	2.2	-	
Gate-Drain Charge	Q_{gd}		-	2.0	-	
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1.0\text{MHz}$	-	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

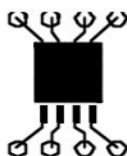
Notes:

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.

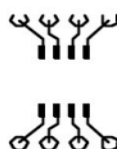
a) 50°C/W when mounted on a 1.0in^2 pad of 2 oz. copper.



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



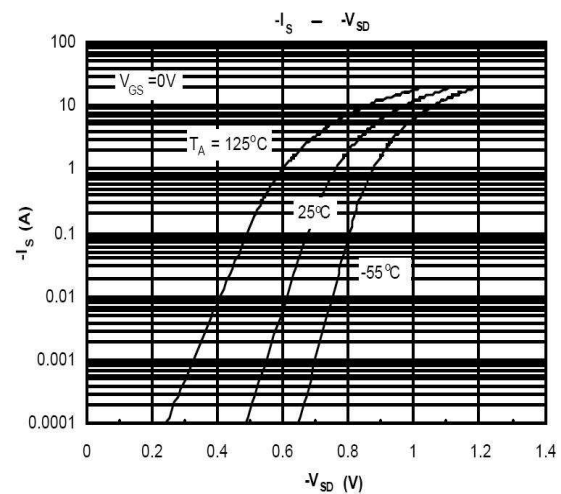
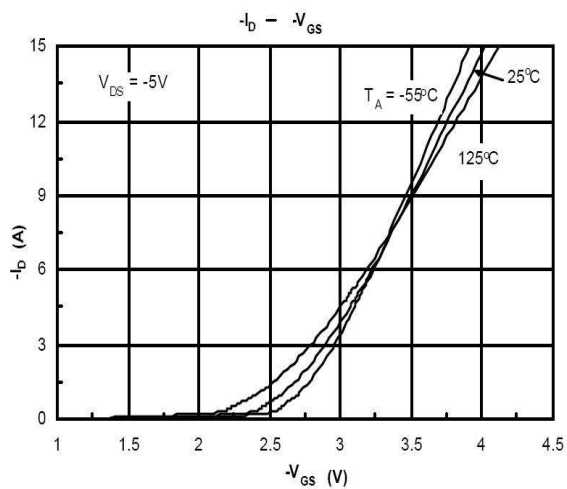
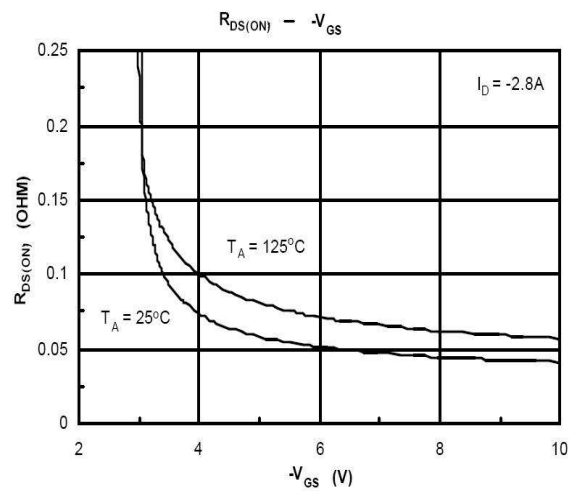
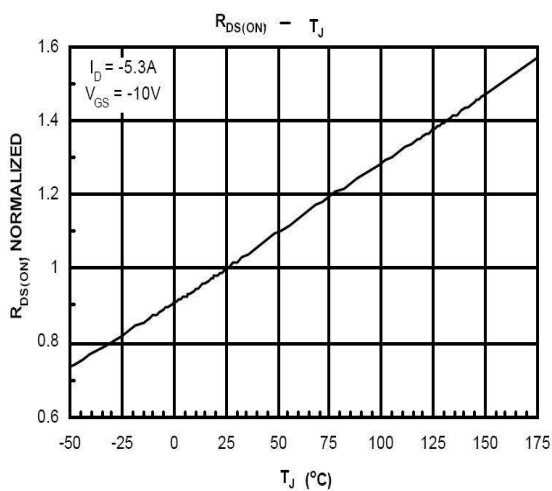
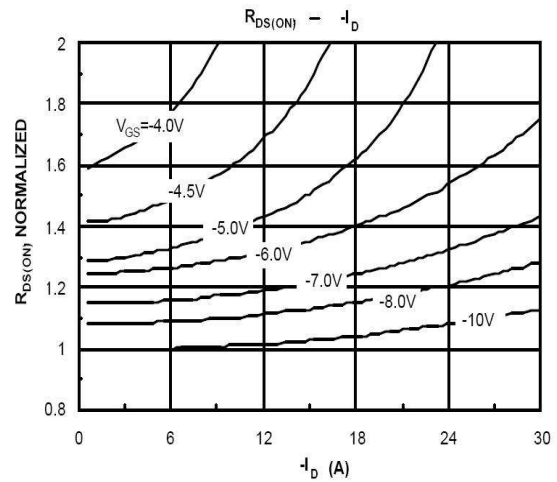
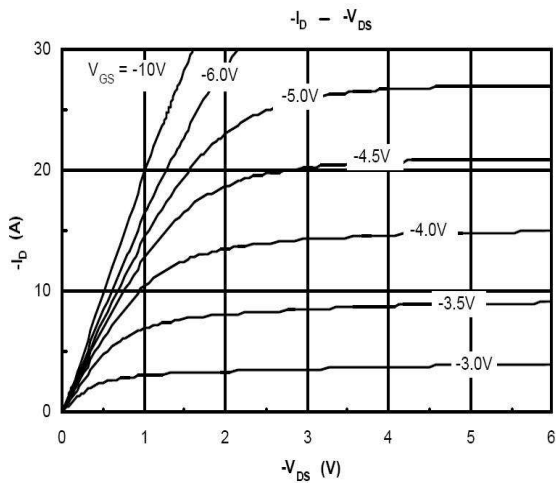
c) 125°C/W when mounted on a minimum pad.



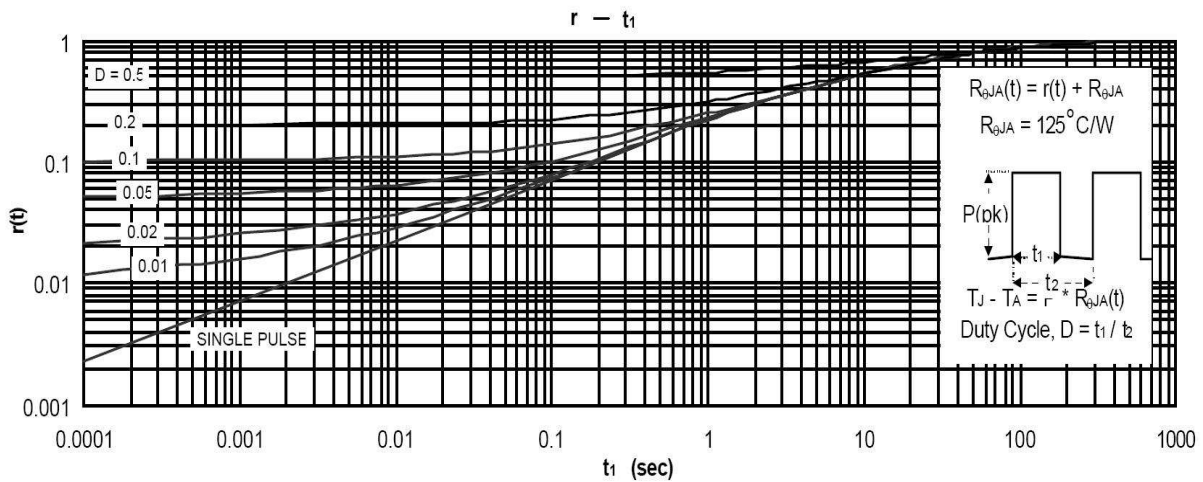
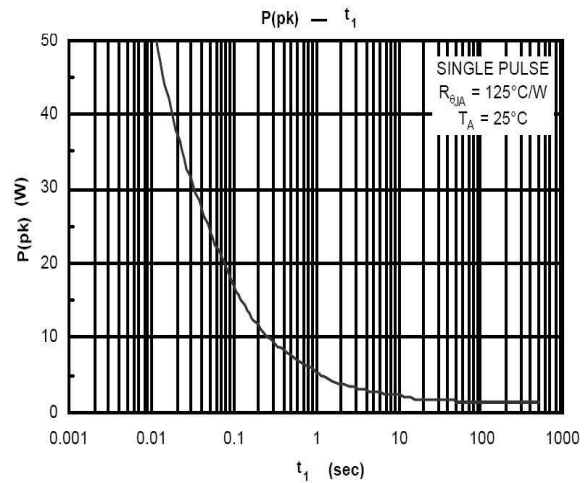
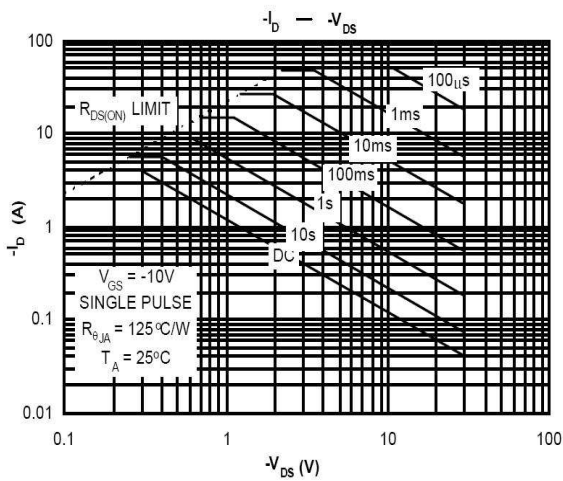
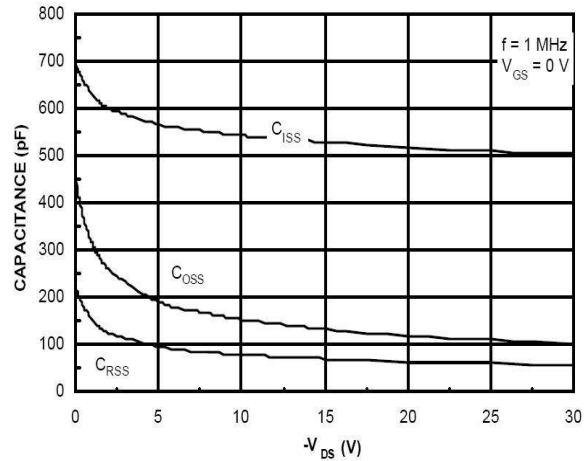
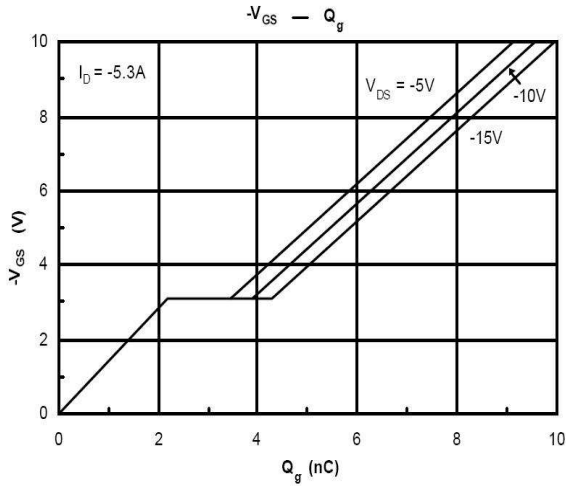
Scale 1 : 1 on letter size paper

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

Typical Performance Characteristics



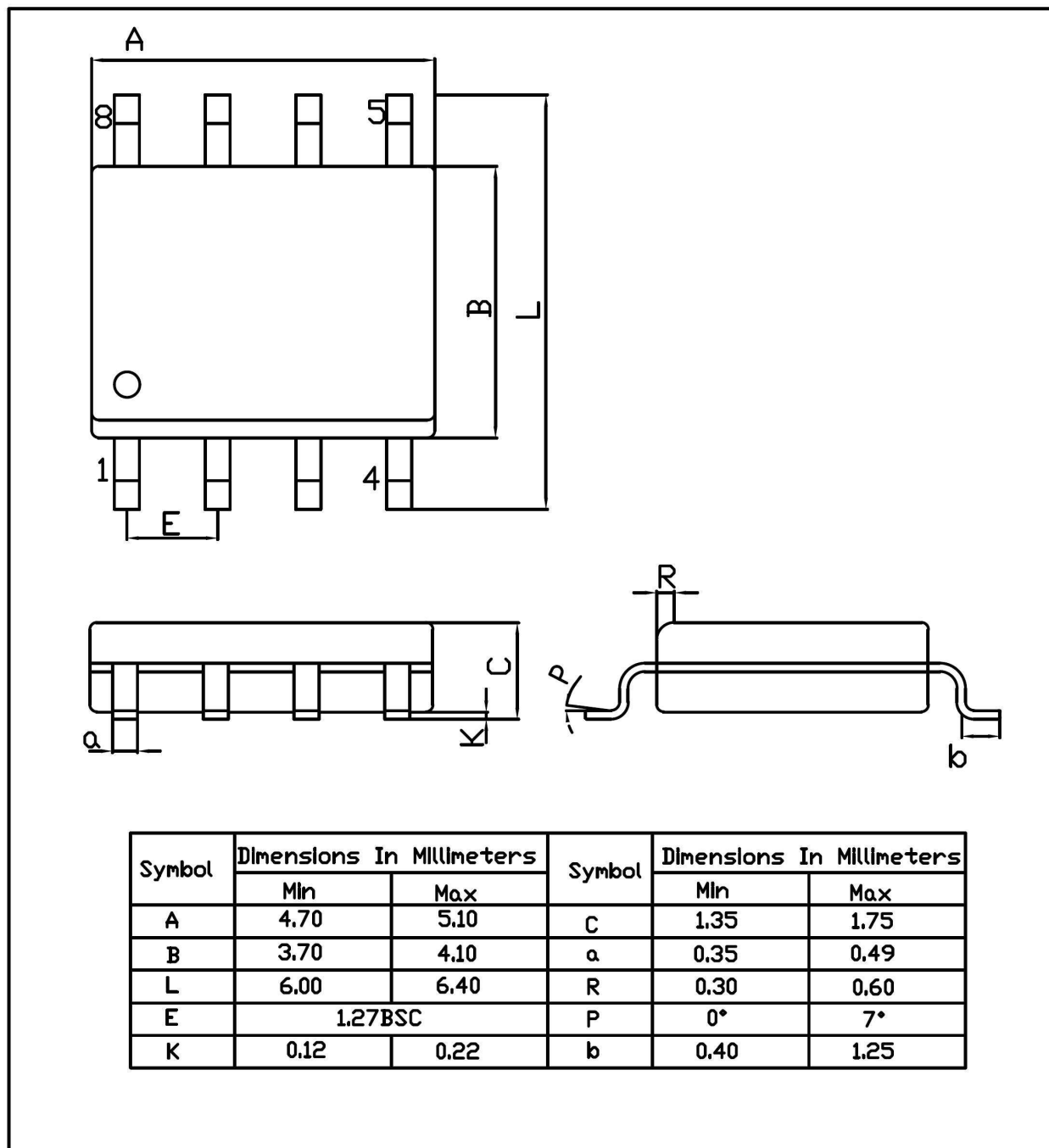
Typical Performance Characteristics



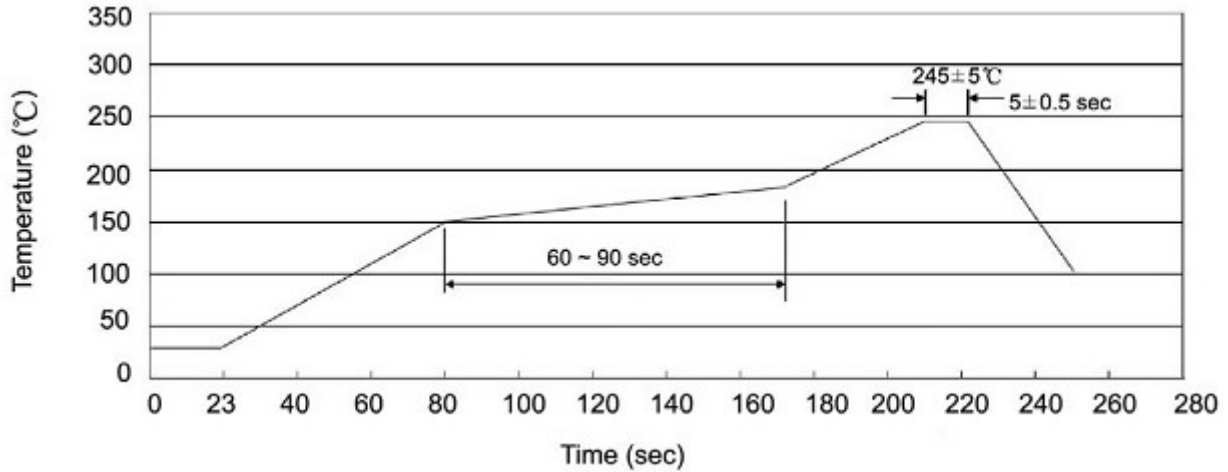
Package Dimensions

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