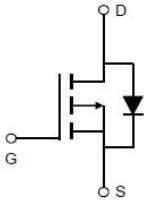
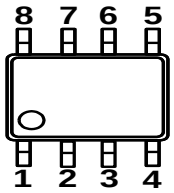
Feature

- -30V,-5.3A
  $R_{DS(ON)}$ <58mΩ @V_{GS}=-10V T_{YP}=50mΩ
  $R_{DS(ON)}$ <80mΩ @V_{GS}=-4.5V T_{YP}=65mΩ
- 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℃ 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℃)		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	℃/W
Thermal Resistance from Junction to Ambient Note1c		$R_{\theta JA}$	125	℃/W
Thermal Resistance from Junction to case Note1		$R_{\theta JC}$	25	℃/W
Storage Temperature		T_{STG}	-55~ +150	℃

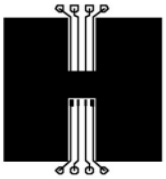
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

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

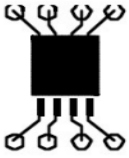
Notes:

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.

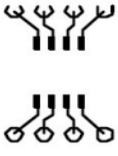
a) 50℃/W when mounted on a 1.0 in^2 pad of 2 oz. copper.



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



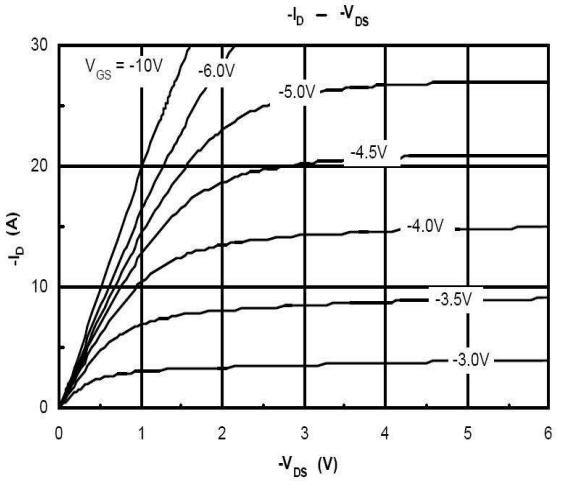
c) 125℃/W when mounted on a minimum pad.

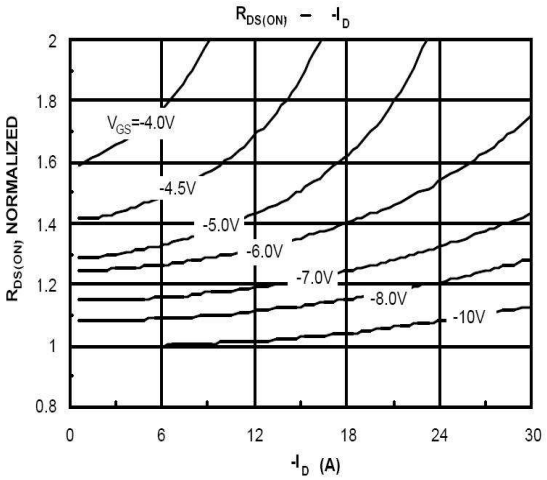


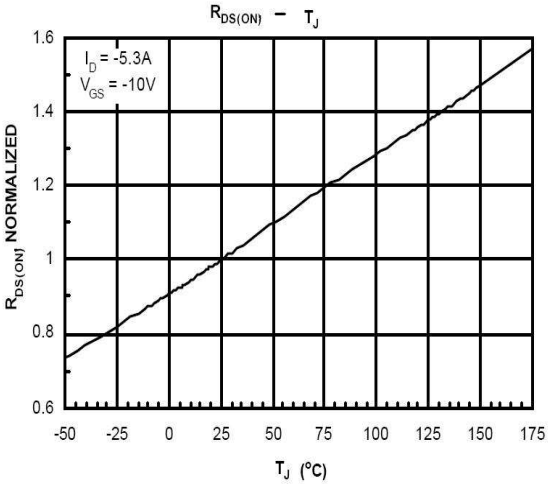
Scale 1 : 1 on letter size paper

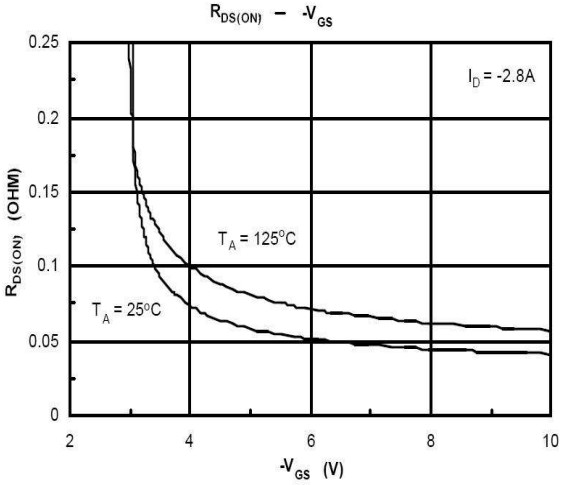
2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

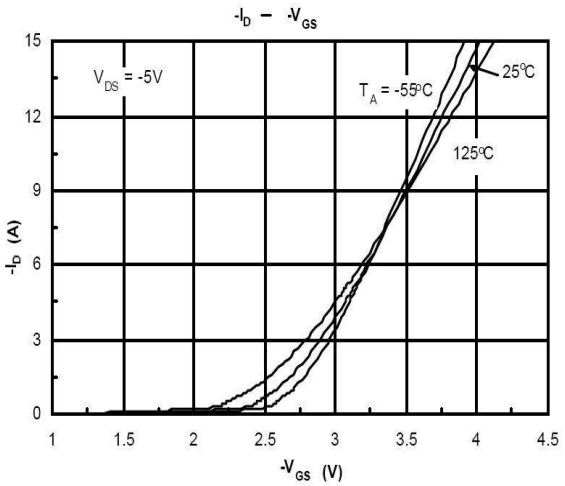
Typical Performance Characteristics

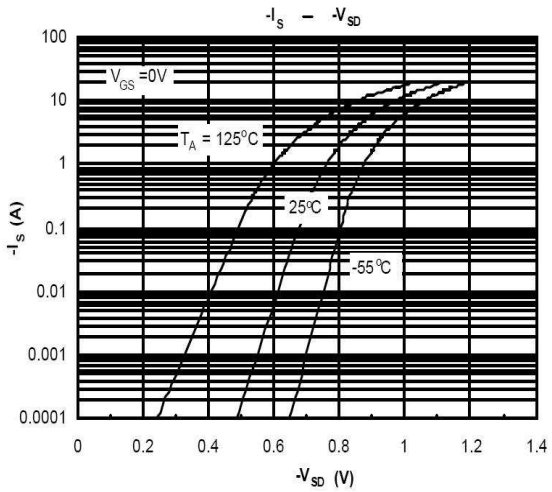




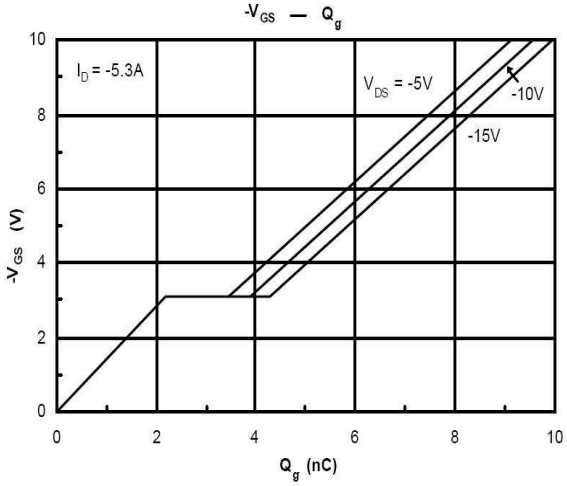


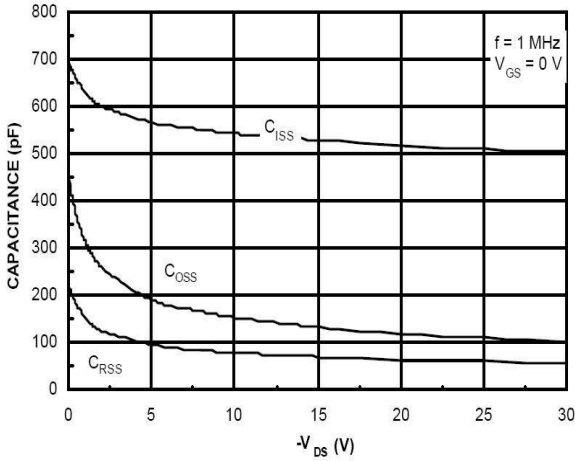


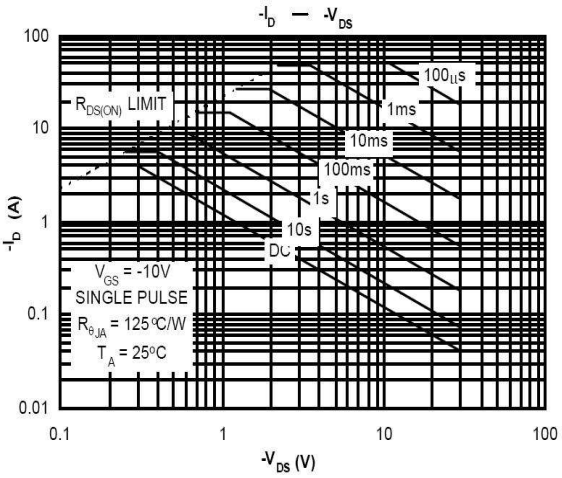


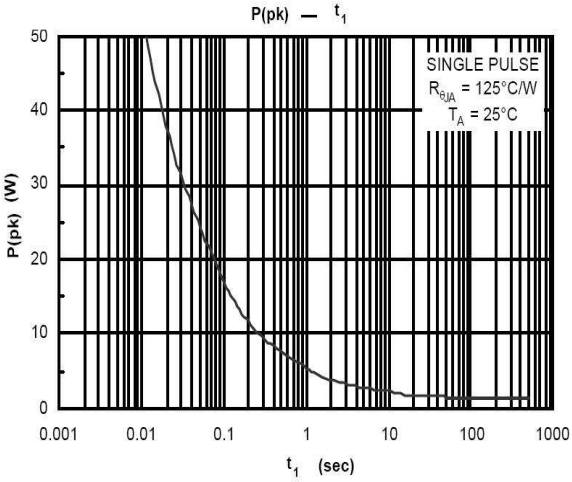


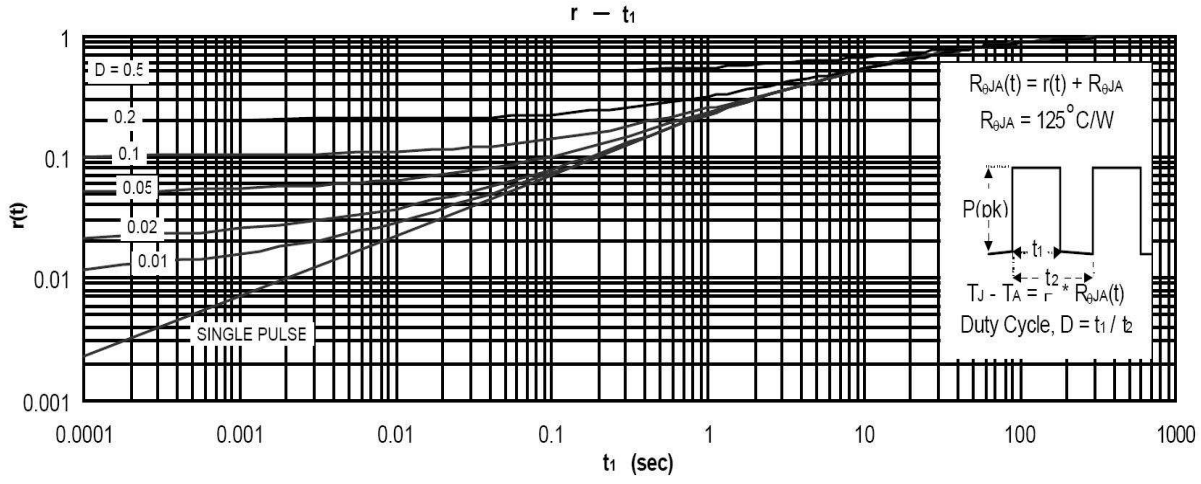
Typical Performance Characteristics





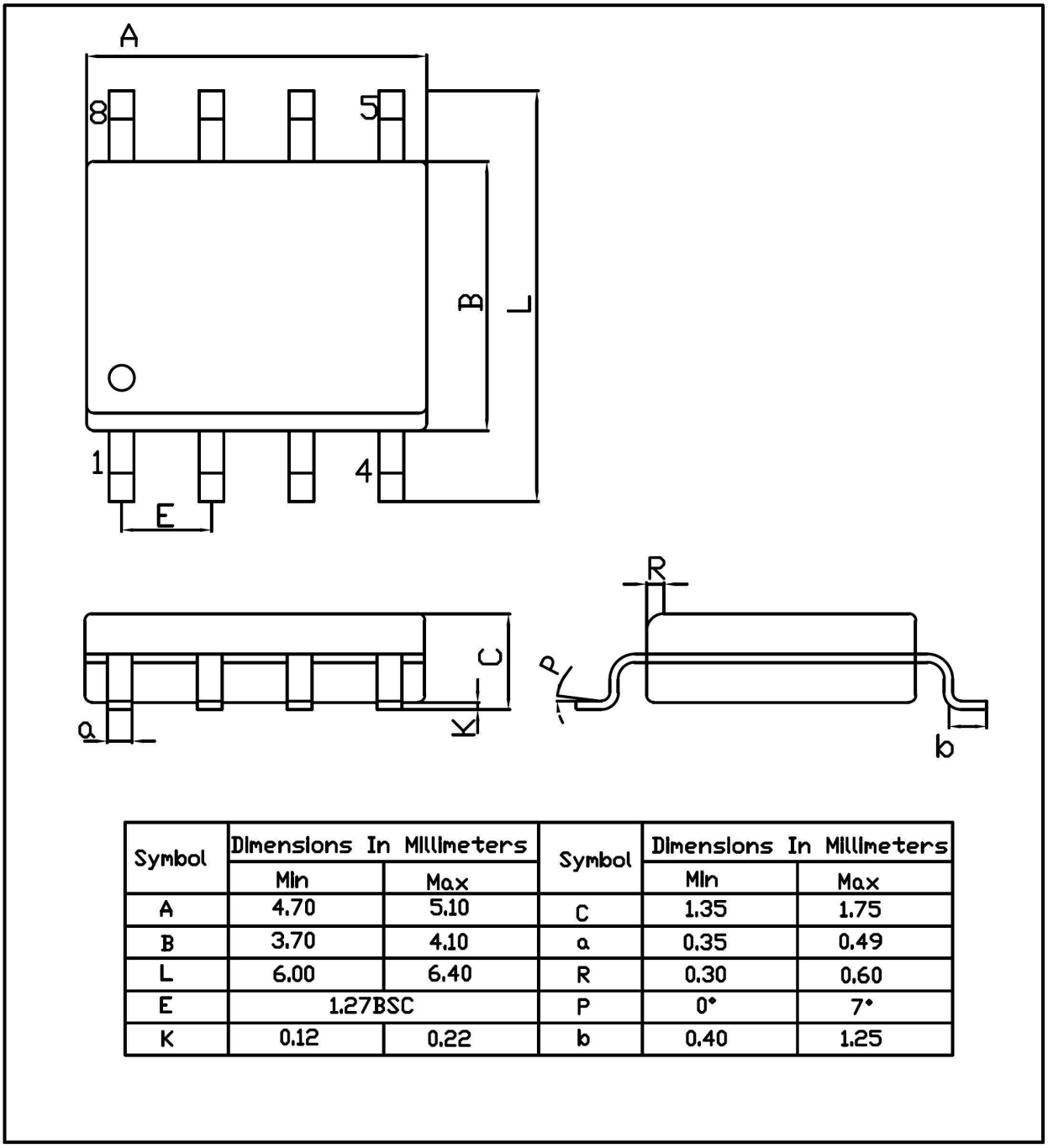






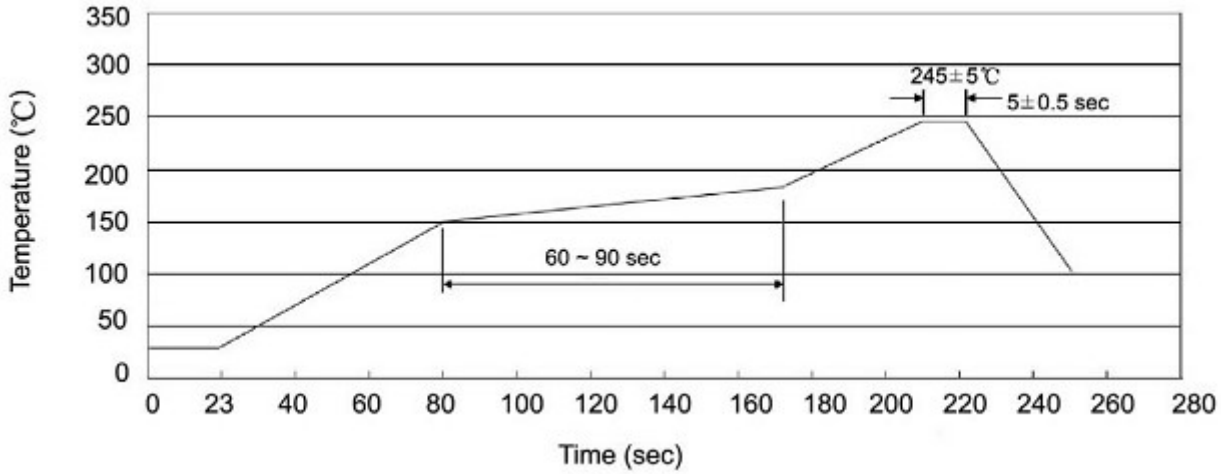
Package Dimensions

SOP-8 Unit:mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	a	0.35	0.49
L	6.00	6.40	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25

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



说明：	Note:
1、预热温度 25～150℃，时间 60～90sec;	1.Preheating:25~150℃, Time:60~90sec.
2、峰值温度 245±5℃，时间持续为 5±0.5sec;	2.Peak Temp.:245±5℃, Duration:5±0.5sec.
3、焊接制程冷却速度为 2～10℃/sec.	3. Cooling Speed: 2~10℃/sec.

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

温度：260±5℃	时间：10±1 sec.	Temp.:260±5℃	Time:10±1 sec