查询APT30M90AVR供应商 捷多邦，专业PCB打样工厂，24小时加急出货

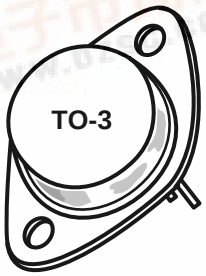
ADVANCED POWER TECHNOLOGY®

APT30M90AVR

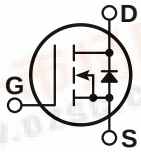
300V 33A 0.090Ω

POWER MOS V®

Power MOS V® is a new generation of high voltage N-Channel enhancement mode power MOSFETs. This new technology minimizes the JFET effect, increases packing density and reduces the on-resistance. Power MOS V® also achieves faster switching speeds through optimized gate layout.



- **Faster Switching**
- **Lower Leakage**
- **100% Avalanche Tested**
- **Popular TO-3 Package**



MAXIMUM RATINGS

All Ratings: T_C = 25°C unless otherwise specified.

Symbol	Parameter	APT30M90AVR	UNIT
V_{DSS}	Drain-Source Voltage	300	Volts
I_D	Continuous Drain Current @ T_C = 25°C	33	Amps
I_{DM}	Pulsed Drain Current ①	132	
V_{GS}	Gate-Source Voltage Continuous	±30	Volts
V_{GSM}	Gate-Source Voltage Transient	±40	
P_D	Total Power Dissipation @ T_C = 25°C	235	Watts
	Linear Derating Factor	1.88	W/°C
T_J,T_{STG}	Operating and Storage Junction Temperature Range	-55 to 150	°C
T_L	Lead Temperature: 0.063" from Case for 10 Sec.	300	
I_{AR}	Avalanche Current ① (Repetitive and Non-Repetitive)	33	Amps
E_{AR}	Repetitive Avalanche Energy ①	30	mJ
E_{AS}	Single Pulse Avalanche Energy ④	1300	

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage (V_{GS} = 0V, I_D = 250μA)	300			Volts
$I_{D(on)}$	On State Drain Current ② ($V_{DS} > I_{D(on)} \times R_{DS(on)}$ Max, V_{GS} = 10V)	33			Amps
$R_{DS(on)}$	Drain-Source On-State Resistance ② (V_{GS} = 10V, 0.5 $I_{D[Cont.]}$)			0.090	Ohms
I_{DSS}	Zero Gate Voltage Drain Current ($V_{DS} = V_{DSS}$, V_{GS} = 0V)			25	μA
	Zero Gate Voltage Drain Current (V_{DS} = 0.8 V_{DSS}, V_{GS} = 0V, T_C = 125°C)			250	
I_{GSS}	Gate-Source Leakage Current (V_{GS} = ±30V, V_{DS} = 0V)			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage ($V_{DS} = V_{GS}$, I_D = 1.0mA)	2		4	Volts

⚠ **CAUTION:** These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

APT Website - http://www.advancedpower.com

USA
405 S.W. Columbia Street Bend, Oregon 97702-1035 Phone: (541) 382-8028 FAX: (541) 388-0364
EUROPE

-5822 Rev A

DYNAMIC CHARACTERISTICS

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
C_{iss}	Input Capacitance	V_{GS} = 0V V_{DS} = 25V f = 1 MHz		4100	4950	pF
C_{oss}	Output Capacitance			700	980	
C_{rss}	Reverse Transfer Capacitance			200	300	
Q_g	Total Gate Charge ③	V_{GS} = 10V V_{DD} = 0.5 V_{DSS} I_D = $I_{D[Cont.]}$ @ 25°C		130	195	nC
Q_{gs}	Gate-Source Charge			25	37	
Q_{gd}	Gate-Drain ("Miller") Charge			55	77	
$t_{d(on)}$	Turn-on Delay Time	V_{GS} = 15V V_{DD} = 0.5 V_{DSS} I_D = $I_{D[Cont.]}$ @ 25°C R_G = 1.6Ω		12	24	ns
t_r	Rise Time			10	20	
$t_{d(off)}$	Turn-off Delay Time			43	65	
t_f	Fall Time			7	14	

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
I_S	Continuous Source Current (Body Diode)			33	Amps
I_{SM}	Pulsed Source Current ① (Body Diode)			132	
V_{SD}	Diode Forward Voltage ② (V_{GS} = 0V, I_S = -$I_{D[Cont.]}$)			1.3	Volts
t_{rr}	Reverse Recovery Time (I_S = -$I_{D[Cont.]}$, dI_S/dt = 100A/µs)		390		ns
Q_{rr}	Reverse Recovery Charge (I_S = -$I_{D[Cont.]}$, dI_S/dt = 100A/µs)		6		µC

THERMAL CHARACTERISTICS

Symbol	Characteristic	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to Case			0.53	°C/W
$R_{\theta JA}$	Junction to Ambient			30	

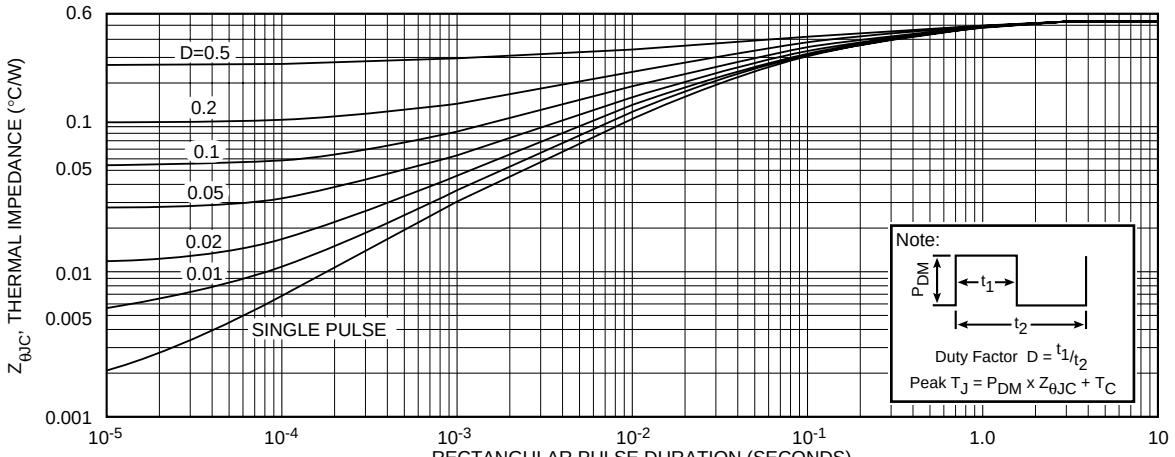
① Repetitive Rating: Pulse width limited by maximum junction temperature.

② Pulse Test: Pulse width < 380 µS, Duty Cycle < 2%

③ See MIL-STD-750 Method 3471

④ Starting T_j = +25°C, L = 2.39mH, R_G = 25Ω, Peak I_L = 33A

APT Reserves the right to change, without notice, the specifications and information contained herein.



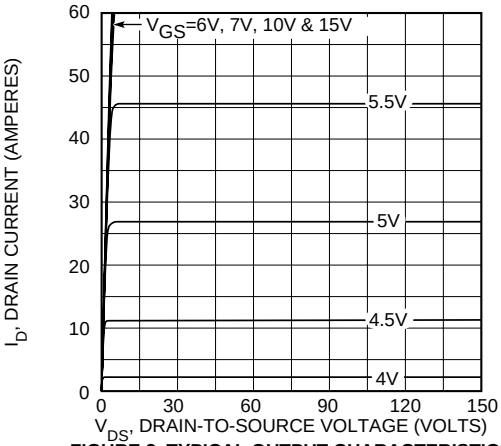


FIGURE 2, TYPICAL OUTPUT CHARACTERISTICS

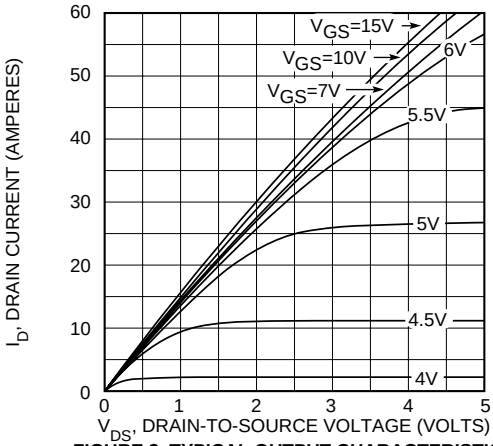


FIGURE 3, TYPICAL OUTPUT CHARACTERISTICS

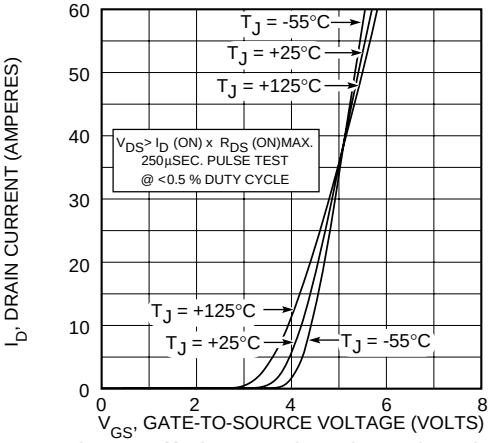


FIGURE 4, TYPICAL TRANSFER CHARACTERISTICS

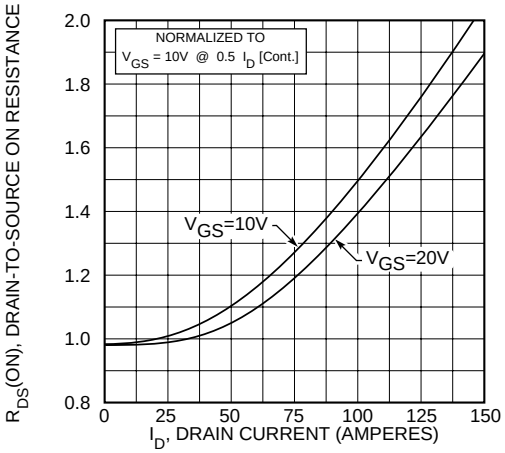


FIGURE 5, R_{DS}(ON) vs DRAIN CURRENT

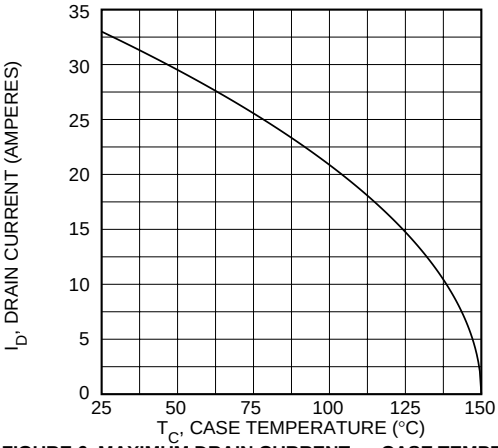


FIGURE 6, MAXIMUM DRAIN CURRENT vs CASE TEMPERATURE

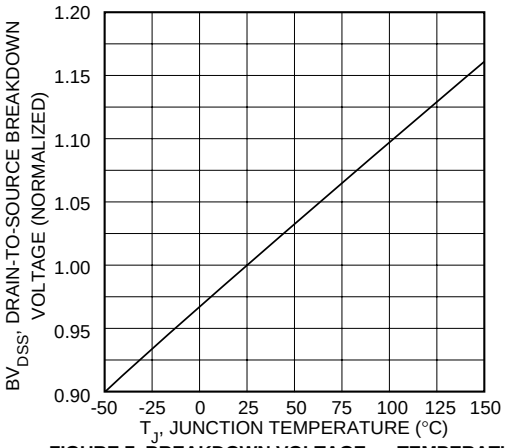


FIGURE 7, BREAKDOWN VOLTAGE vs TEMPERATURE

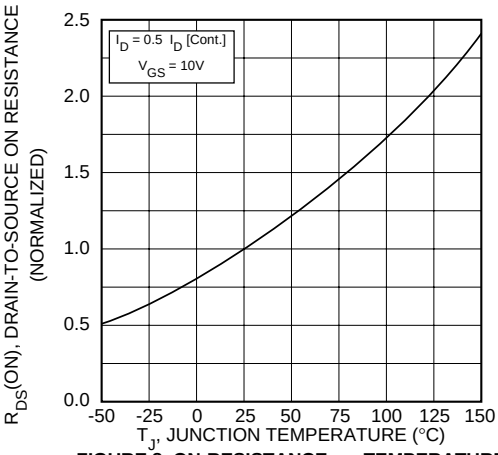


FIGURE 8, ON-RESISTANCE vs. TEMPERATURE

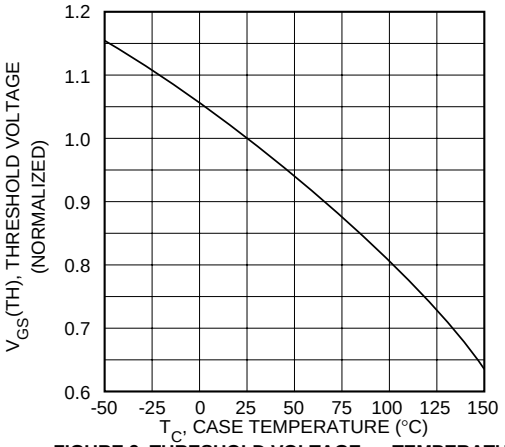


FIGURE 9, THRESHOLD VOLTAGE vs TEMPERATURE

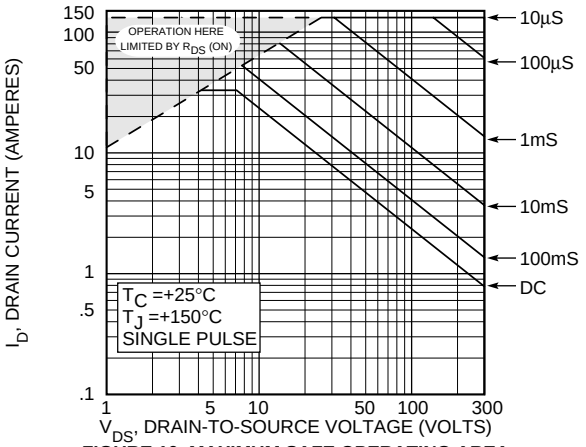


FIGURE 10, MAXIMUM SAFE OPERATING AREA

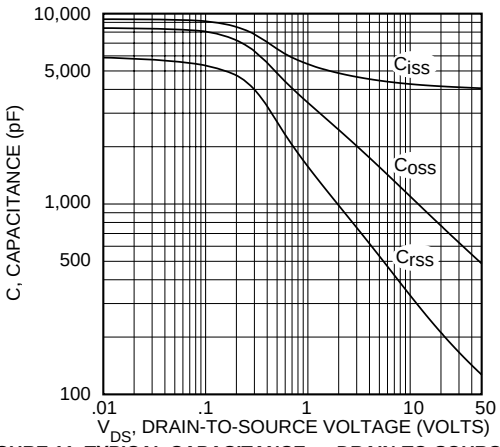


FIGURE 11, TYPICAL CAPACITANCE vs DRAIN-TO-SOURCE VOLTAGE

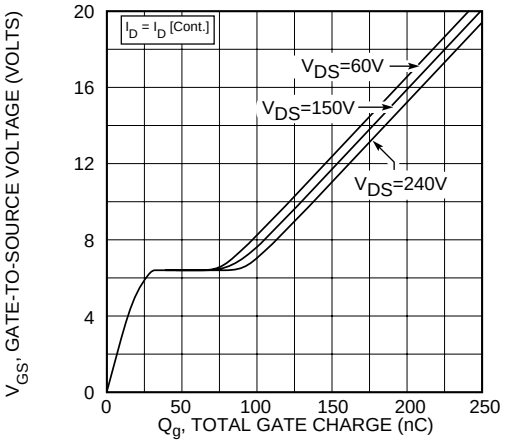


FIGURE 12, GATE CHARGES vs GATE-TO-SOURCE VOLTAGE

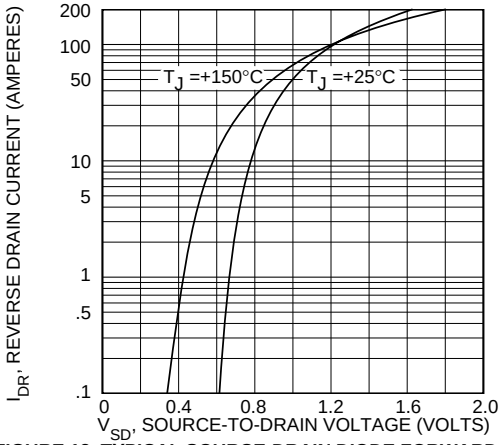
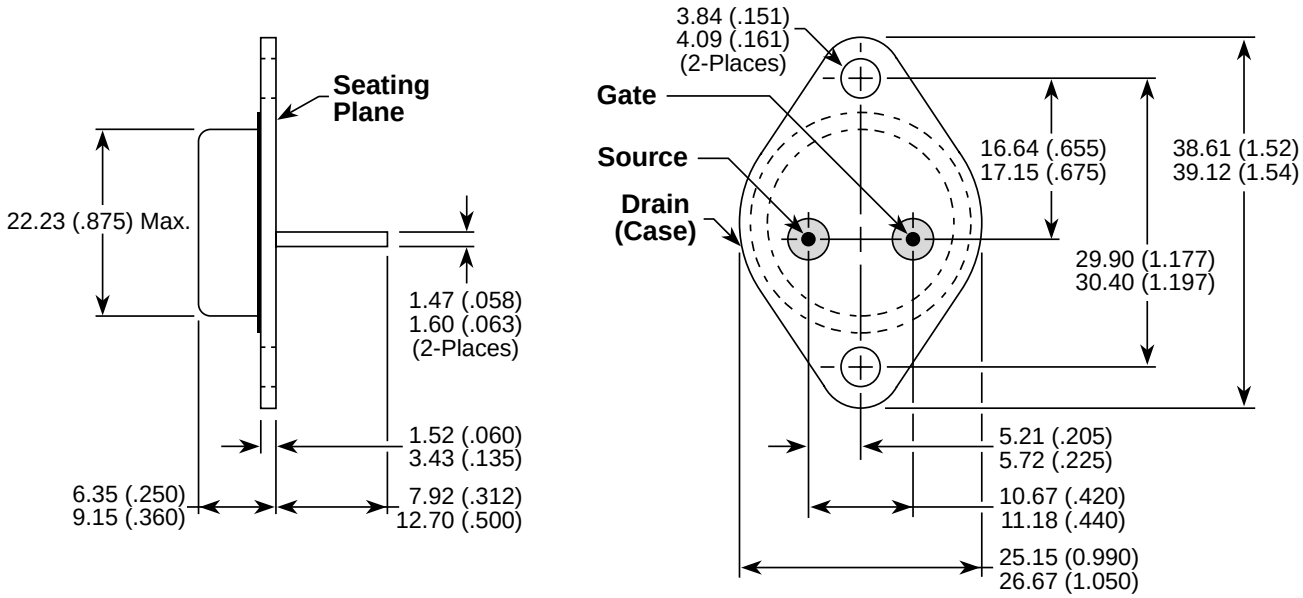


FIGURE 13, TYPICAL SOURCE-DRAIN DIODE FORWARD VOLTAGE

TO-3 (TO-204AE) Package Outline



Dimensions in Millimeters and (Inches)

APT's devices are covered by one or more of the following U.S.patents: 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336