

APT1004RBN	1000V	4.4A	4.00Ω
APT904RBN	900V	4.4A	4.00Ω
APT1004R2BN	1000V	4.0A	4.20Ω
APT904R2BN	900V	4.0A	4.20Ω

## POWER MOS IV®

### N-CHANNEL ENHANCEMENT MODE HIGH VOLTAGE POWER MOSFETS

#### MAXIMUM RATINGS

All Ratings:  $T_C = 25^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	APT				UNIT
		904RBN	1004RBN	904R2BN	1004R2BN	
$V_{DSS}$	Drain-Source Voltage	900	1000	900	1000	Volts
$I_D$	Continuous Drain Current	4.4		4.0		Amps
$I_{DM}$	Pulsed Drain Current ①	17.6		16		Amps
$V_{GS}$	Gate-Source Voltage	±30				Volts
$P_D$	Total Power Dissipation @ $T_C = 25^\circ\text{C}$ , Derate Above $25^\circ\text{C}$	180				Watts
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	- 55 to 150				°C

#### TATIC ELECTRICAL CHARACTERISTICS

Symbol	Characteristic / Test Conditions / Part Number	MIN	TYP	MAX	UNIT
$BV_{DSS}$	Drain-Source Breakdown Voltage ( $V_{GS} = 0V, I_D = 250 \mu\text{A}$ )	APT1004RBN / APT1004R2BN	1000		Volts
		APT904RBN / APT904R2BN	900		Volts
$I_{DSS}$	Zero Gate Voltage Drain Current ( $V_{DS} = V_{DSS}, V_{GS} = 0V$ ) ( $V_{DS} = 0.8 V_{DSS}, V_{GS} = 0V, T_C = 125^\circ\text{C}$ )			250	$\mu\text{A}$
				1000	
$I_{GSS}$	Gate-Source Leakage Current ( $V_{GS} = \pm 30V, V_{DS} = 0V$ )			±100	nA
$I_{D(ON)}$	On State Drain Current ② ( $V_{DS} > I_{D(ON)} \times R_{DS(ON)} \text{ Max}, V_{GS} = 10V$ )	APT1004RBN / APT904RBN	4.4		Amps
		APT1004R2BN / APT904R2BN	4.0		Amps
$V_{GS(TH)}$	Gate Threshold Voltage ( $V_{DS} = V_{GS}, I_D = 1\text{mA}$ )	2		4	Volts
$R_{DS(ON)}$	Static Drain-Source On-State Resistance ② ( $V_{GS} = 10V, I_D = 0.5 I_{D(Cont.)}$ )	APT1004RBN / APT904RBN		4.00	Ohms
		APT1004R2BN / APT904R2BN		4.20	Ohms

#### THERMAL CHARACTERISTICS

Symbol	Characteristic	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to Case			0.68	°C/W
$R_{\theta JA}$	Junction to Ambient			40	°C/W
$T_L$	Max. Lead Temp. for Soldering Conditions: 0.063" from Case for 10 Sec.			300	°C

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

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APT1004R/904R/1004R2/904R2BN

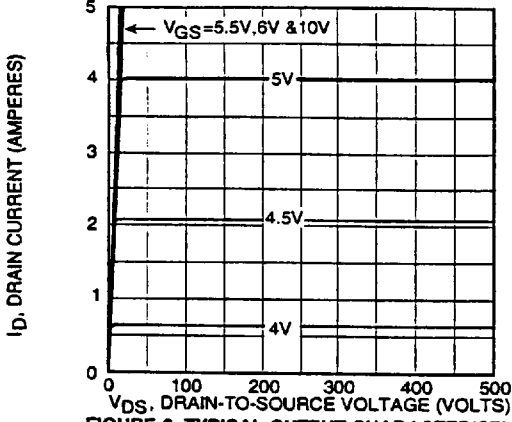


FIGURE 2, TYPICAL OUTPUT CHARACTERISTICS

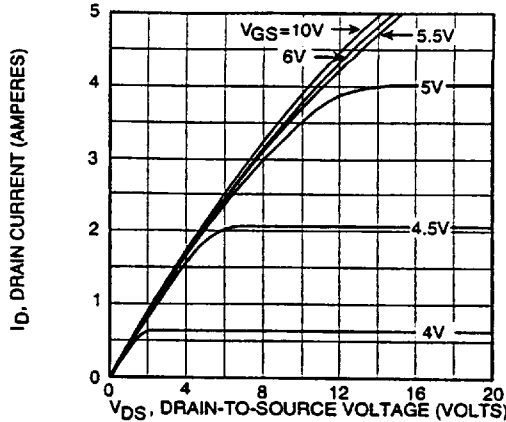


FIGURE 3, TYPICAL OUTPUT CHARACTERISTICS

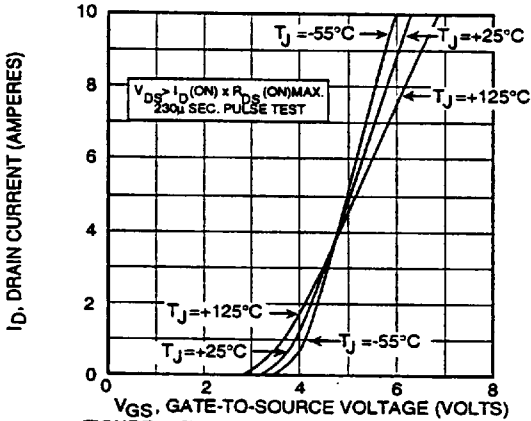


FIGURE 4, TYPICAL TRANSFER CHARACTERISTICS

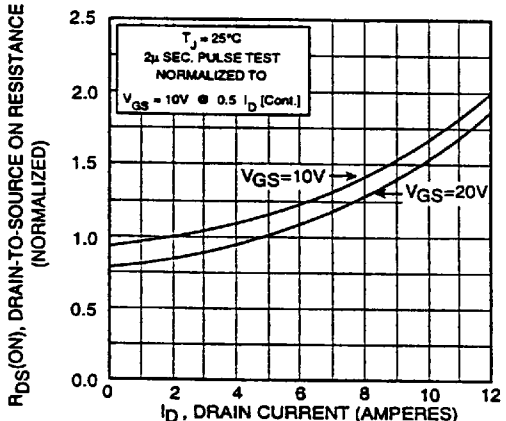


FIGURE 5,  $R_{DS(ON)}$  vs DRAIN CURRENT

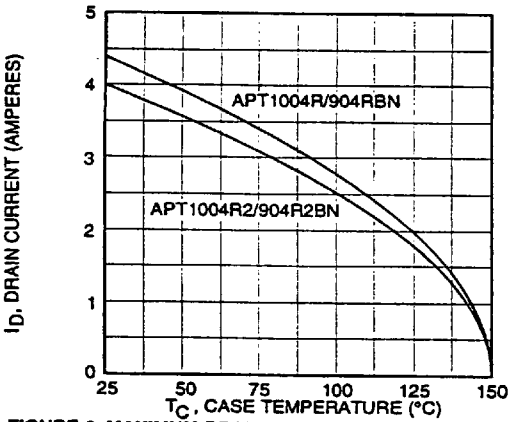


FIGURE 6, MAXIMUM DRAIN CURRENT vs CASE TEMPERATURE

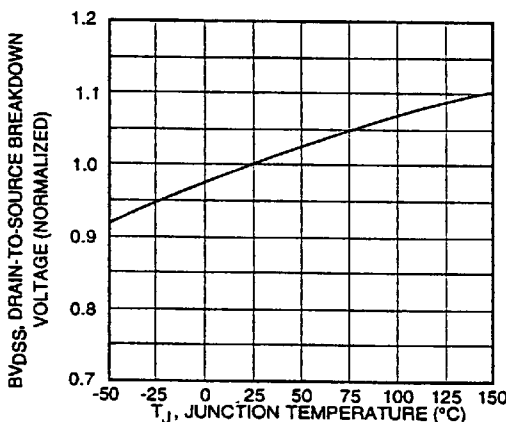


FIGURE 7, BREAKDOWN VOLTAGE vs TEMPERATURE

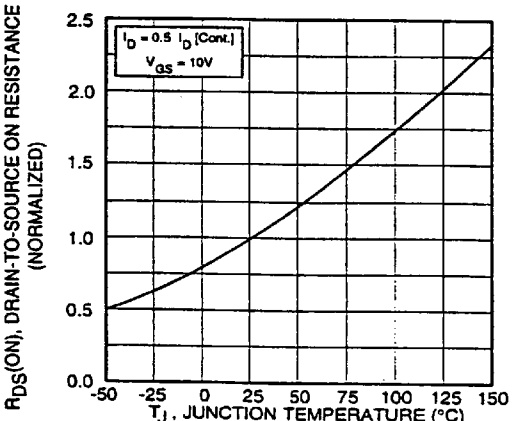


FIGURE 8, ON-RESISTANCE vs. TEMPERATURE

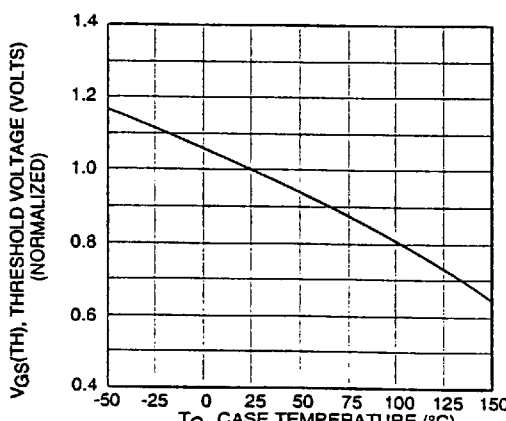


FIGURE 9, THRESHOLD VOLTAGE vs TEMPERATURE

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