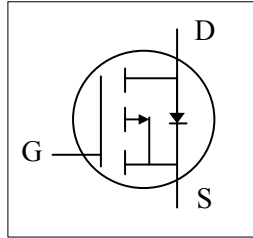
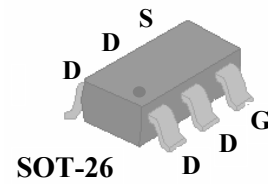




- ▼ **Fast Switching Characteristic**
- ▼ **Low Gate Charge**
- ▼ **Small Footprint & Low Profile Package**
- ▼ **RoHS Compliant & Halogen-Free**



$BV_{DSS}$	-30V
$R_{DS(ON)}$	55m $\Omega$
$I_D$	-5A



## Description

AP3P055 series are from Advanced Power innovated design and silicon process technology to achieve the lowest possible on-resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.

The SOT-26 package is widely used for all commercial-industrial applications.

## Absolute Maximum Ratings@ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-30	V
$V_{GS}$	Gate-Source Voltage	+20	V
$I_D@T_A=25^\circ\text{C}$	Drain Current, $V_{GS} @ 10V^3$	-5	A
$I_D@T_A=70^\circ\text{C}$	Drain Current, $V_{GS} @ 10V^3$	-4	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	-20	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	2	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

## Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient <sup>3</sup>	62.5	$^\circ\text{C}/\text{W}$



# AP3P055Y

## Electrical Characteristics@T<sub>J</sub>=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=-10V, I_D=-4A$	-	-	55	mΩ
		$V_{GS}=-4.5V, I_D=-3A$	-	-	90	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-	-3	V
$g_{fs}$	Forward Transconductance	$V_{DS}=-5V, I_D=-4A$	-	8	-	S
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=-24V, V_{GS}=0V$	-	-	-10	uA
$I_{GSS}$	Gate-Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 0.1$	uA
$Q_g$	Total Gate Charge	$I_D=-4A$	-	6	19	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=-15V$	-	2.5	-	nC
$Q_{gd}$	Gate-Drain ("Miller") Charge	$V_{GS}=-4.5V$	-	2	-	nC
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=-15V$	-	9	-	ns
$t_r$	Rise Time	$I_D=-1A$	-	6	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega$	-	30	-	ns
$t_f$	Fall Time	$V_{GS}=-10V$	-	15	-	ns
$C_{iss}$	Input Capacitance	$V_{GS}=0V$	-	600	960	pF
$C_{oss}$	Output Capacitance	$V_{DS}=-15V$	-	100	-	pF
$C_{riss}$	Reverse Transfer Capacitance	$f=1.0MHz$	-	70	-	pF

## Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{SD}$	Forward On Voltage <sup>2</sup>	$I_S=-1.7A, V_{GS}=0V$	-	-	-1.2	V
$t_{rr}$	Reverse Recovery Time	$I_S=-4A, V_{GS}=0V,$	-	10	-	ns
$Q_{rr}$	Reverse Recovery Charge	$di/dt=100A/\mu s$	-	3.5	-	nC

### Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board,  $t \leq 5s$  ; 156°C/W when mounted on min. copper pad.

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT, AUTOMOTIVE OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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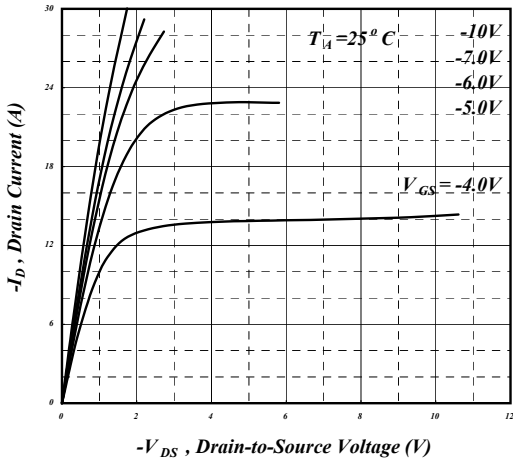


Fig 1. Typical Output Characteristics

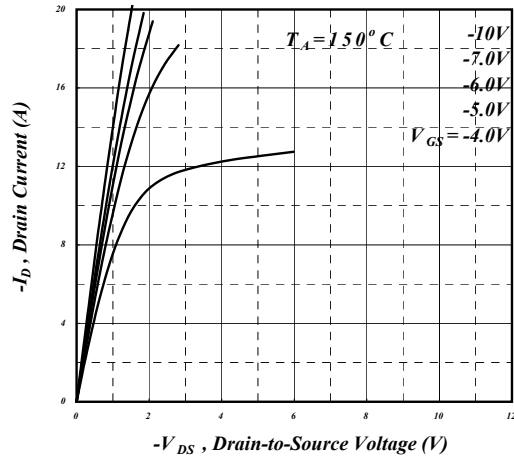


Fig 2. Typical Output Characteristics

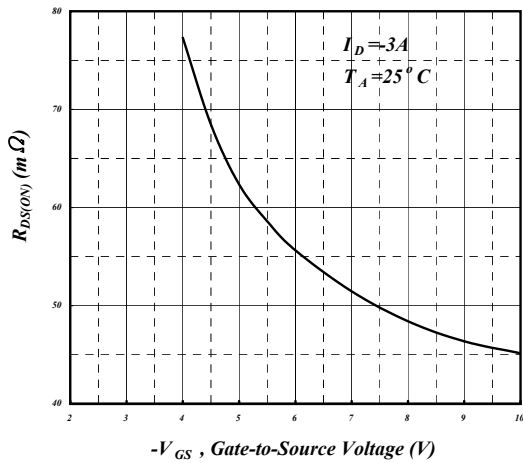


Fig 3. On-Resistance v.s. Gate Voltage

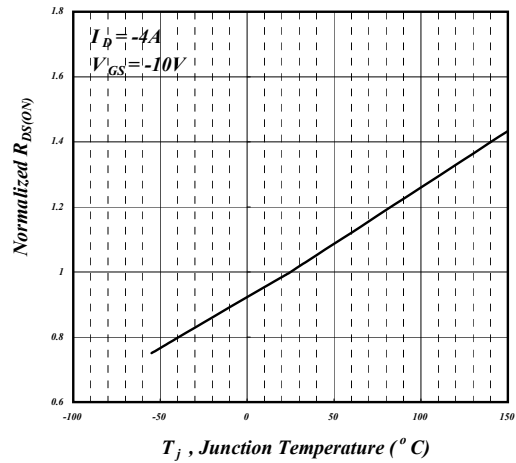


Fig 4. Normalized On-Resistance v.s. Junction Temperature

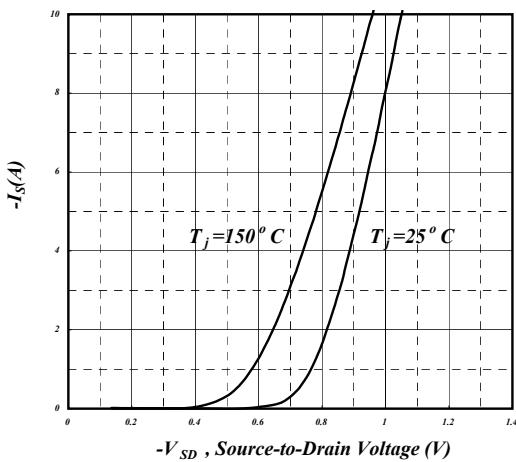


Fig 5. Forward Characteristic of Reverse Diode

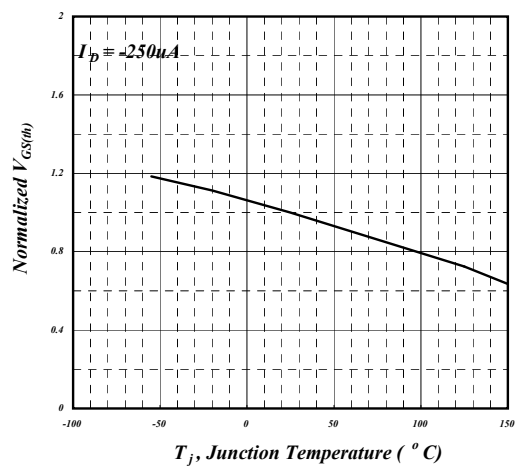


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

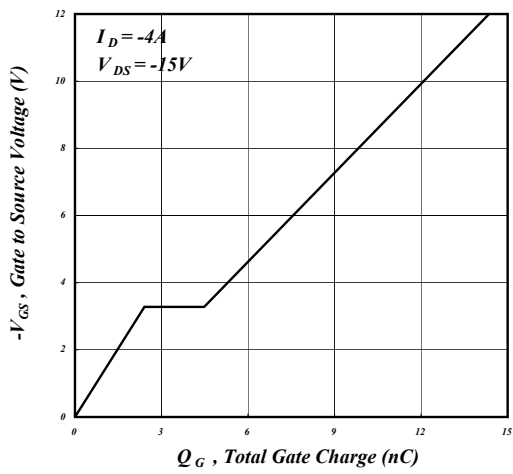


Fig 7. Gate Charge Characteristics

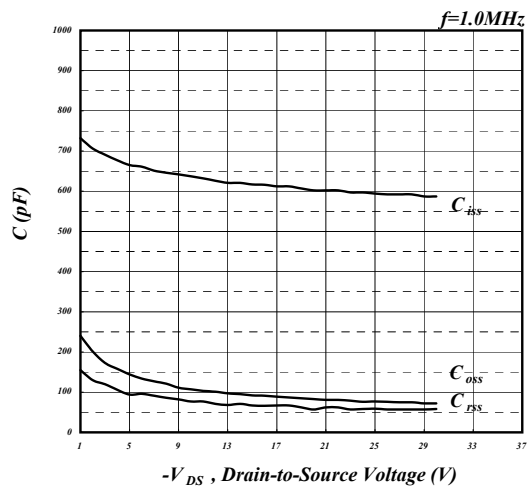


Fig 8. Typical Capacitance Characteristics

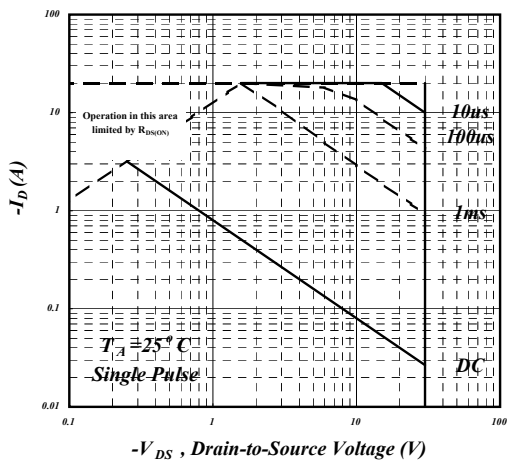


Fig 9. Maximum Safe Operating Area

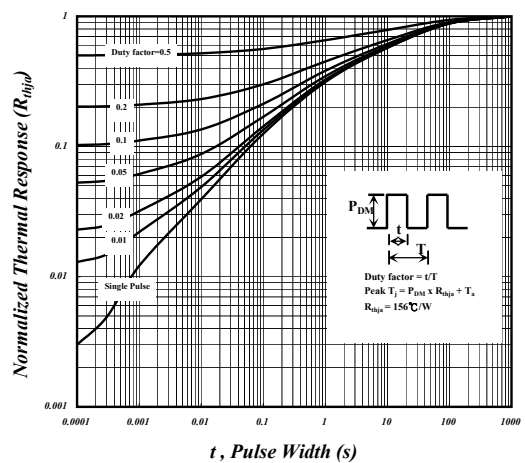


Fig 10. Effective Transient Thermal Impedance

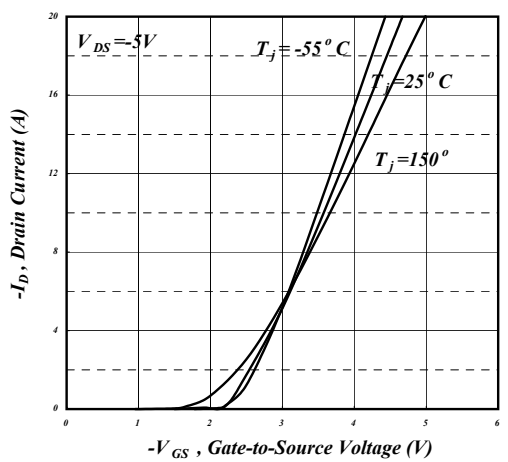


Fig 11. Transfer Characteristics

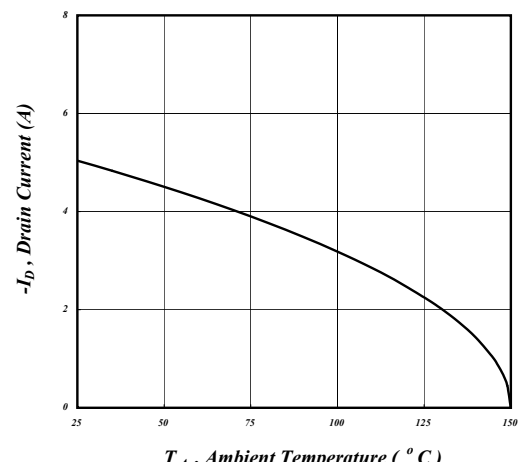
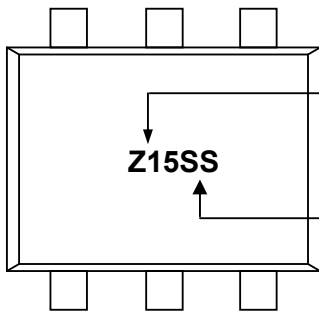


Fig 12. Drain Current v.s. Ambient Temperature



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**MARKING INFORMATION**



Part Number : Z15

Date Code : SS

SS:2004,2008,2012,2016,2020,2024...

SS:2003,2007,2011,2015,2019,2023...

SS:2002,2006,2010,2014,2018,2022...

SS:2001,2005,2009,2013,2017,2021...